

AMERICAN ARTISAN and Hardware Record

Vol. 82. No. 18.

620 SOUTH MICHIGAN AVENUE, CHICAGO, OCTOBER 29, 1921.

\$2.00 Per Year.



Monarch
MALLEABLE
The "Stay Satisfactory" Range

*You Are
Afforded*

***Many Advantages In Selling
The MONARCH Malleable Range***

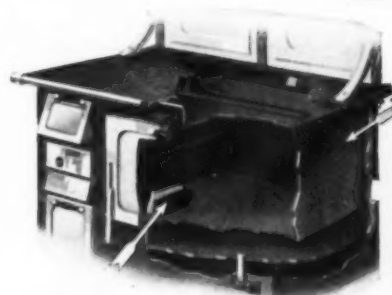
AND ONE OF CONSIDERABLE IMPORTANCE IS THE PRICE ADVANTAGE OVER YOUR COMPETITORS.

The price at which you can buy the MONARCH enables you to sell at an attractive price to the consumer, and still clear a substantial margin of profit.

And, when you sell a MONARCH Malleable Range you are sure of a *satisfied customer*—it is a range that will operate efficiently and "Stay Satisfactory."

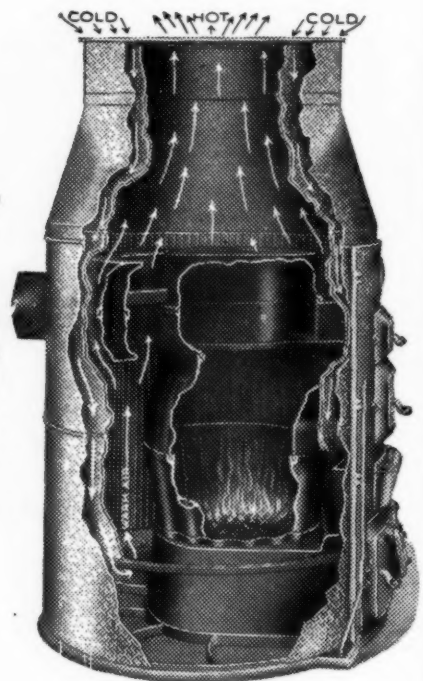
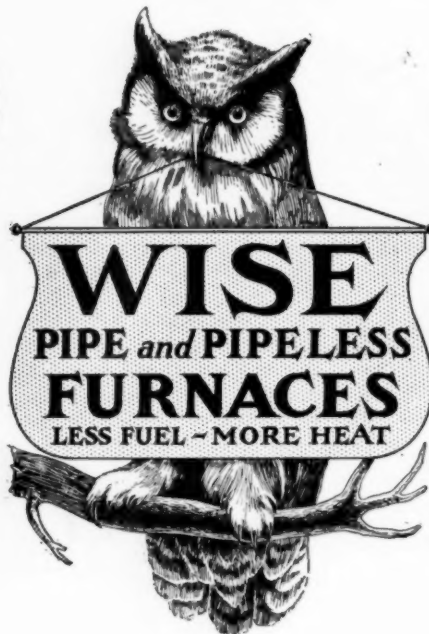
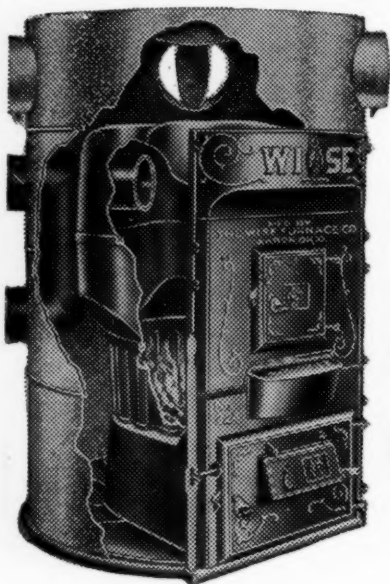
Investigate the MONARCH Line now!

MALLEABLE IRON RANGE CO.
BEAVER DAM - - - WISCONSIN



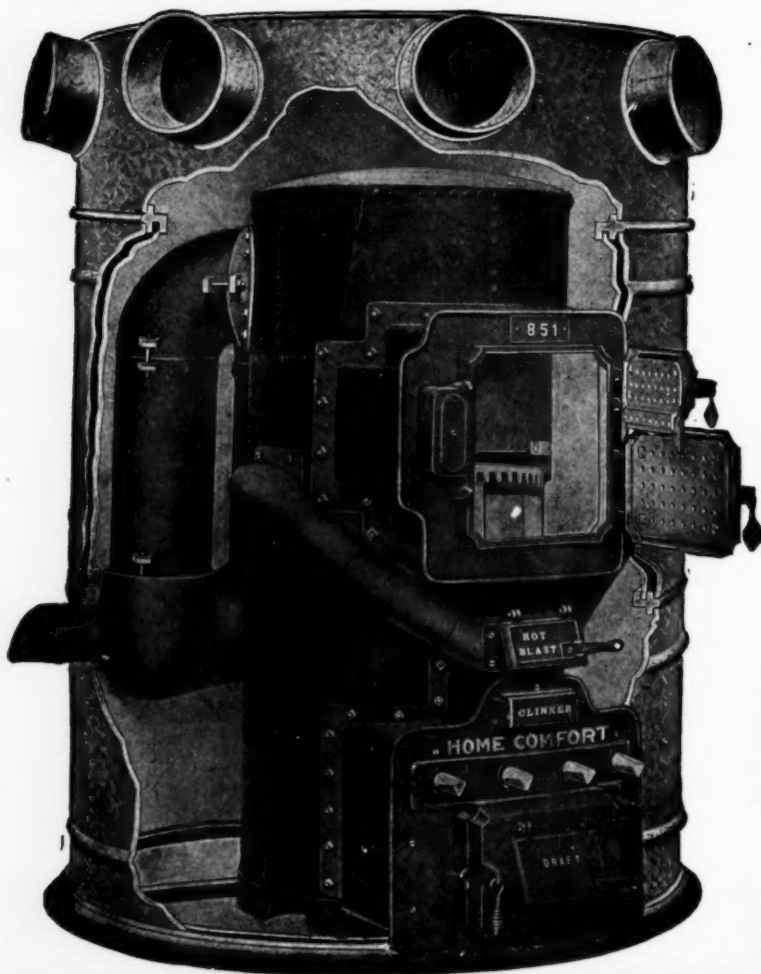
VITRIFIED Glass Coated Flues in the MONARCH protect all inside flue linings from the detrimental effects of Rust and Corrosion.

The Wide Awake Dealer's Choice



For exclusive territory rights address

THE WISE FURNACE CO. - - AKRON, OHIO



"HOME COMFORT"

THERE ARE NO BETTER WARM AIR HEATERS

THE dealer who sells "Home Comfort" warm air heaters sells heaters that are not only exceptionally reliable but distinctively well made.

An examination of the ALL STEEL construction of "Home Comfort" warm air heaters will reveal to you an unusually well designed heating apparatus.

*For many years they have been
real money makers*

The members of this new company are men who have been connected with the original makers for more than twenty years.

We have a splendid exclusive agency sales plan to offer you.

Let us tell you all about it.

Write today for our catalog

ST. LOUIS HEATING CO.
2400-26 COLEMAN ST. ST. LOUIS, MO

FOUNDED 1880
BY
DANIEL STERN
Thoroughly Covers
The Hardware, Stove,
Sheet Metal, and Warm
Air Heating and Venti-
lating Interests

AMERICAN ARTISAN and Hardware Record

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CHICAGO, OCTOBER 29, 1921.

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DID YOU SHOW A GAIN FOR SEPTEMBER

The Chandler Hardware Company, Sylvania, Ohio, showed a gain of \$3,983.05 in sales during July, 1921, as against the same month of 1920, their total sales for the seven months of 1921 being \$113,432.63 as compared with \$111,468.54 for the same period of 1920.

July first was the turning point with Chandler's.

And keep this in mind that this showing is made in dollars and cents, so that in actual sales they are actually about 25 per cent ahead of last year.

In the insert on this page we show a reproduction of an advertisement of a country department store, recently visited by one of our editors. This store is operated in Mount Vernon, Illinois, a typical city in the class of ten thousand population, located in the south central portion of the state.

There is some coal mining in the section, also a few industrial plants, such as a large car works, a warm air furnace foundry, several candy and cracker factories and, of course, the farmers raise corn and hogs.

It would be improper to claim that this city of Mount Vernon was exceptionally favored during the past year. In fact, conditions there, from the standpoint of the merchant, were no better than in almost any other city in its class.

And yet, here we have a retail mercantile enterprise which shows a gain of one-third in sales for the month of September 1921, as against the same month in 1920.

What is the reason for this gain?

Is it just an exceptional case on which no argument can be based?

No, there was one good reason—the same reason that made it possible for Chandler's to show a gain of over \$3,000 for the month of July.

What was this reason?

Can it be applied by hardware merchants in other towns?

The reason was a very simple one, and it can be applied to any merchant who is willing to look conditions squarely in the face and willing to work to make the most of his opportunity.

Chandler's advertised regularly!

Chandler's sent his salesmen out to work up new business in his trading territory.

Carp's advertised regularly.

Carp's sent out his salesmen to work up new business in his trading territory.

Chandler's refused to stay licked.

Carp's refused to stay licked.

Now comes Monroe, Wisconsin, with another case of a hardware merchant who refused to believe that farmers would not spend money if he asked them to buy, and that they would not pay their bills if he asked them to do so.

The Geigel Hardware Company, in that typical farming county seat town, took in over \$990.00 cash per day in a four and a half days' sale which came to a close Tuesday, October 11th—from farmers.

You can sell hardware and get the cash—
If you go after it.

OUR SALES

September, 1921 . . . \$34,619.10

September, 1920 . . . 22,738.41

Gain for September . . . \$11,880.69

CARP & CO.
NEW YORK CHICAGO ST. LOUIS

Random Notes and Sketches

By Sidney Arnold

The air was blue in the office of the Standard Foundry & Manufacturing Company, DeKalb, Illinois, when I called there the other day to see Wesley Johnson, the Salesmanager, to find out about a battery of big warm air furnaces that they had made for the Ohio State Fair Buildings at Columbus.

However, it was not because he was feeling blue or depressed, as business is good with the Company. No, the real cause of the blueness was that everybody was puffing away on good cigars which were distributed by Wesley in celebration of the arrival on Sunday, October 23rd, of Miss Margaret Elizabeth Johnson.

Both Miss Margaret Elizabeth and Mrs. Johnson are doing well, and Wesley is as proud as a peacock.

* * *

The diaphragm beats a tattoo on the stomach when you laugh. Every time you let go a good, hearty laugh, this diaphragm pops up and down on your liver, and helps to drive away the very thing that gives you the blues—biliousness.

Laughter is the best brand of pills on earth. Laughter strikes in when it comes from without, and instantly comes to the surface when it starts from within. Laughter penetrates.

You may laugh because you are happy, and you may be happy because you laugh. It is the one thing where the cause is the effect and the effect is the cause. Any man can be a millionaire of good cheer.

* * *

Here is a true story of how a juryman outwitted a judge, and that without telling an untruth.

It was related to me by Joseph Stearns of the Stearns Register Company, Detroit, Michigan.

The man came breathlessly into the court: "Oh, your honor, if you can excuse me, pray do. I don't know which will die first—my wife or my daughter."

"Dear me, that's sad," said the innocent judge. "Certainly; you are excused."

The next day the juryman was met by a friend, who, in a sympathetic voice asked: "How's your wife?"

"She's all right, thank you."

"And your daughter?"

"She's all right, too. Why do you ask?"

"Why, yesterday you said you did not know which would die first."

"Nor do I. That is a problem which time alone can solve."

* * *

Martin Englehart, retail hardware dealer of Chicago, grows younger every year, for the simple reason that he cultivates a sense of humor and finds something to laugh about every day.

A week ago, he tells me, a son arrived in the home of one of his customers and the proud father rushed out to borrow a pair of scales, but none was available except some belonging to a rags, bones and bottles man.

So he borrowed those and was aghast when he discovered the heir weighed only four pounds.

"But you mustn't worry," said the junkman consolingly, squinting at the dial. "Them's my buying scales. Your boy weighs 'bout eight 'n' a half—mebbe eight 'n' three-quarters pounds."

* * *

Al T. Fletcher of the Sales Service of the Sykes Company, Chicago, Illinois, tells about a printer who became slightly peeved at a letterhead from a doctor who wanted bids on several thousand letterheads, different sizes, different grades, and different colors, and wanted the printing form held standing. The printer took his typewriter in hand and wrote:

"Am in the market for bids on one operation for appendicitis. One, two or five-inch incision—with or without ether—also with or without nurse. If appendix is found to be sound, want quotations to include putting same back and canceling order. If removed, successful bidder is expected to hold incision open for about sixty days, as I expect to be in the market for an operation for gallstones at that time and want to save the extra cost of cutting."

* * *

A. F. Fanning, sales representative for the Haynes-Langenberg Manufacturing Company, St. Louis, Missouri, tells of a St. Louis man who had occasion to visit Chicago.

He remained for two weeks longer than his original intention, and, in writing to his wife of his experience, he said:

"Chicago is a great city; but I do wish I had come here before I was converted."

* * *

To illustrate the amount of information which the average pupil derives from his studies, A. C. Marsh, president Marsh Lumber Company, Dover, Ohio, sends me a copy of Johnny Jones' essay on air, as follows:

"Breath is made of air. We breathe always with our lungs, except at night, when our breath keeps life going through our noses while we are asleep. If it wasn't for our breath, we should die whenever we slept.

"Boys that stay in a room all day should not breathe. They should wait until they get outdoors. A lot of boys staying in a room make carbonic acid, and carbonic acid is more poisonous than mad dogs, though not just in the same way. It does not bite, but that's no matter so long as it kills you."

* * *

Easy.

There are numerous ways to be happy;

There are numerous ways to be gay;

But the generous feller,

Big-hearted and meller,

He has doped out the easiest way.

A feller kin be quite contented

By makin' his brother men glad,

Because it's reflected

Right back unexpected,

The best joy a man ever had.

A feller don't have to be wealthy

To play a philanthropist's part;

He must just be keeferful

To always be cheerful

And keep the sunshine in his heart.

—Richmond Times-Dispatch.

Expert Shows How an Analysis of Hardware Business Methods Opens the Way to Big Increase of Profits.

Frank G. Cramer, Manager Better Business Department, Hall Hardware Company, Minneapolis, Gives Results of Survey.

Reprinted by Courtesy of *Associated Advertising*, Organ of the Associated Advertising Clubs of the World.

If business men, especially in the smaller communities, could be induced to take stock of their business methods now and then, in addition to whatever inventory they take of stock on their shelves, merchandising would be the gainer at the same time that greater profits would begin to show in the cash-drawer.

It is a common experience to run into a retailer who has come across some new wrinkle which he is certain will mean a complete revolution in his business. He tries it, concentrates on it, and perhaps with considerable success. Even granting that he is altogether successful, how much greater would be the results if he would make a searching analysis of his entire store in an endeavor to supplant time-worn, ineffective methods with up-to-date, business-getting system.

Believing that we could be of help to retailers in our territory, the Better Business Department of the Hall Hardware Company of Minneapolis began to work out a questionnaire, the development of which now has reached a point where, in a sense, it may be said to have accumulated information capable of application to any retail business, hardware or otherwise.

Following are the questions, together with comment based on answers and the survey made:

1. *Have you a sign that points the way to your store?*

Your old customers and friends know where you are, but how about the many people who live in the extended territory made possible by the automobile? How about the tourists who pass through your town each day during your busy season, who need all kinds of equipment?

2. *Does the outside appearance of your store attract attention? Is it painted frequently? Is it free from weather-beaten signs and old fashioned equipment?*

A store to attract attention must be in contrast to the others and this can easily be accomplished by fresh paint, clean windows and attractive displays.

3. *Are your windows paying full rent?*

If you put your windows to work, they will pay you a profit. Your windows advertise you whether you give them attention or not. Untidy, mussed windows advertise unprogressiveness and to many this means an undesirable place to buy. If they are clean and bright and always well trimmed, they have a real pulling power. It pays to change them often and to show goods in season. Lookers become buyers and many sales are made from the sidewalk. Make small individual displays so as to have each department represented as often as possible.

4. *Do you have a bull's-eye in the window?*

Some one large item to attract attention—something different. In a hunting window an outdoor display

can be made. During house-cleaning an electric washing machine. Manufacturers' cut-outs can be used in most every display but only one should be used at a time. A moving object, a live animal or a curiosity—something that is entirely different—something that has color or life.

5. *Do you make your window displays talk by the use of show cards?*

Your windows should not be silent salesmen and they will not be if in each display you use a show card containing a short description and price. Often show cards bring customers into the store when the merchandise itself will fail.

6. *Do you price everything on display so your customers can see for themselves what the articles will cost them?*

The success of the Department Store and the Five and Ten Cent Stores has been almost entirely due to the fact that they price everything on display when in the window or in the store. The old-fashioned idea of marking with a secret code leads people to believe that you have more than one price in your store. If your merchandise is marked at a fair price, it should be no secret and if your competitor wants to know the price of any of your merchandise he can find out even if the goods are not marked. All household articles of interest to women should be on display tables where they can be handled.

7. *Are your windows inclosed?*

A closed background will make a display show up to better advantage. An open background presents to the view of the looker the back of fixtures that are in the store and certainly detracts from the displays themselves. The closed background will add to the appearance of your window displays because it will keep out the flies and dust in the summer time and will prevent frost in the wintertime. A window covered with frost is not inviting.

8. *Are your windows well lighted—do they attract people to the store after dark?*

Concealed lights make it easy for your customers to examine your window displays. The glare from a hanging light not only detracts but casts many shadows which darken the windows and reduce the value of your window displays.

9. *Do you use window fixtures to build up your displays?*

Flat displays do not show the merchandise to good advantage. A built-up window takes less merchandise and each article can easily be seen.

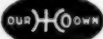
10. *Do you use window dividers so as to have two displays in place of one?*

Small displays can be changed often and only a small amount of merchandise is required. Mixed dis-

plays, except at Christmastime, when people are looking for suggestions, are not as effective as small ones.

11. *Do you display all of your kindred lines of hardware—the many small items that are needed in connection with a larger one?*

When a man buys a lawn mower it isn't because he wants a lawn mower but because he wants a nice looking lawn, because to use it means hard work and it costs real money to buy it. Therefore, it is your duty to have on display all of your other items necessary to accomplish that purpose—rakes, grass catchers, shears, sickles, turf edgers, lawn seed, fertilizer, etc. When he buys a refrigerator he knows that it will cost him



DO YOU KNOW?

How Many Sales You Lose on Goods You Are Out of, Or
On Goods It Would Pay You to Stock
Or Why Sales Are Not Made to Many Customers Who Ask
About Certain Articles

IMPORTANT

Goods We Are Out Of
Goods We Are Low On
Goods Called for Not in Our Stock
Prices Higher or Lower Than Our
Own
Fault Found With Any Article

Must Be Described on This Slip and
Sent Immediately to Office

Date

Salesman

Customer

We are out of.....

We are low on.....

This blank printed in
pad form of 100 sheets
each offers a convenient
way for your clerks to
collect valuable informa-
tion for you.


Pads (100 sheets) at 15c per Pad

Please send as above.

Signed _____

FRANK G. CRAMER,
Mgr. Better Business Dept.

July 22, 1921.



A Dealer Help Which Improves Merchandising Methods.

money for ice in addition to the original price, but he buys it to protect the health of his family. He also needs ice tongs, ice pick, refrigerator pan, etc. All of the kindred items should be in sight so that he can fill the need completely.

12. *In your store do you make it easy for your customers to buy? Is it attractive? Is it well painted? Is it free from old time-worn signs, or is it just like it was years ago?*

Isn't it true that the average store presents but little change from month to month to the patrons who come in almost every day? Isn't it true also that new merchandise can be displayed as often as time will permit? The space just inside the door is important. It is the display space of your store. It is the one space that should contain seasonable articles and the articles should be changed often.

13. *Is your store well lighted and is it one of the bright spots in town?*

It will pay you to equip your store with new lights, throwing a soft light that will not shine in the eyes of your customers. Ordinary globes dropped from the ceiling make it very hard for customers to see your merchandise.

14. *Do you have show cases or stock cases in your store?*

Are the tops of your cases a convenient place to store things—or are they clean and well arranged, and is the merchandise priced? Quite a few items can be displayed to advantage on top of your show cases and counters but they should be few and far between and they should be changed often. All shopworn articles should be disposed of.

15. *Do your fixtures sell goods for you or are they used merely as storage?*

Is your merchandise sampled or is it tucked away out of sight in drawers and boxes? New up-to-date fixtures are an asset to any merchant.

16. *Do you have a bargain table?*

There are always many odds and ends that can be disposed of on a bargain table. Always use a big price card and have each article marked.

17. *Your silent partner is the merchandise on your shelves. Is "he" as active as you are? Is he on the move or is he a loafer?*

If you had a clerk who was a loafer you would get rid of him. If you have stock loafing on your shelves you should get rid of it. Your goods were bought to be sold at a profit. You can not afford to carry them on your shelves. Weed out the loafers and sell them at any price. Dead stock means dead capital. Dead stock keeps down turnover. Bear in mind, however, that often so called dead stock is dead only because you have tucked it away, so that there is no demand for it.

18. *In your want book do you list the items called for that you do not carry in stock?*

It may be that you are turning away many a dollar by not listing such items. Of course you list the items called for that you happen to be out of, but listing those that you do not carry will indicate to you the necessity of buying them and after they have been received it is also a good plan to notify your customers.

19. *Do you let people walk out of your store with your merchandise without having the equivalent in cash or a definite understanding as to the payment?*

Excerpts from letters received:

"We are well pleased with results so far and the general effect has been good although there has necessarily been a little complaint from some of our former long-winded customers who did not appreciate getting several strong requests for money."

"It would never have been possible properly to take care of our business this season under any other plan on account of financial conditions. We certainly will never go back to the old method of 'pay when you please.'"

"We are proud of our start and if anyone can show us that there is a way to do better we want to know about it."

"You can bet I am glad I am on the cash basis. I am sure that I haven't lost any business and when I was on credit I got along with one or two helpers—

now I have four and we are all busy, even putting in a little overtime about six nights a week."

20. *Do you make advertising pay?*

There was a time when merchants believed that a satisfied customer was his best advertising. Therefore, he thought that was all the advertising he needed. In a way he was right, but think for a minute.

How much time do you spend boosting the other fellow? Would you be satisfied with the same amount of advertising?

It is true that you should satisfy and keep old customers by delivering the goods and rendering a service but you can not grow simply by holding your own. You must sell more merchandise to more people.

You can create a demand by telling about usefulness, value and quality, and say less about the price. Price advertising produces one-time results and is a good thing occasionally, but it is generally overworked. Advertising that builds for the future will not always create an instant demand but it will sell the idea and the use of the article—then the sale can be made easily.

In your advertising you should not ask for business. You should advertise to educate your customers so that they would know what benefit your merchandise and your store are to them. Advertising is merely doing something and then telling folks about what you are doing. When business is good, advertising is an opportunity, when business is bad, advertising is a necessity.

A splurge now and then does not produce results. It is necessary occasionally to have a full page advertisement in a dance program or a page in a cook book, but from an advertising standpoint it is mostly waste of money. It renders good will and should be charged to donation.

Part of your advertising should be educational. It should advertise your service and what your store means to the community. The quality of 1847 Rogers silverware in your store is the same as elsewhere but unless you talk about it your customers are liable to be of the opinion that everything purchased in the city is of higher quality. There is merit in most every form of advertising. Your problem is to choose the kind best suited to your use—then use it.

21. *Do you realize that manufacturers advertise nationally to create a demand for your merchandise?*

Do you know what is being advertised to your customers that you do or should carry in stock? Do you realize that many times your customers send out of town for goods that they see advertised because they do not know you carry it in stock?

Your local advertising should tie up your stock to the general advertising of the manufacturer whose lines you carry and turn those who read national advertising to your store to obtain the goods in which they are interested.

22. *Are you giving your newspaper a chance to get results for you?*

Newspaper advertising is first of importance as it reaches out in the community and through it you have an opportunity of telling folks that they can benefit by trading with you. Too much of a load is generally placed upon newspaper advertising. It should be

backed up by window and store displays and occasionally a follow-up letter produces real results as it can be sent to a select list of people who actually need the article advertised.

23. *Do you make your newspaper copy individual? Does it stand out stronger than your competitor's?*

Are you content to run manufacturers' plates to fill up space? You should get a single cut of the article and tell about it in your own language the same as when selling merchandise in the store. You should always carry out your personality by using a distinctive style and by using a regular name plate and in connection with it a trade mark.

24. *Do you standardize your merchandise and your advertising by using the trade mark?*

A distinctive mark should be used in your newspaper advertising and in all kinds of advertising in which your name appears. Then when the distinctive mark goes out of your store on your merchandise it will carry your advertising even though it is impossible to advertise your name.

25. *Do you talk with your farmer customers at their place of business where they can show you the results of their efforts or do you expect them always to come to you?*

It is good advertising—it gives you the personal contact—it shows your customers that you are interested in their problems—it gives you something in common to talk about when they are calling at your store—it will take the place of talking politics and about the weather—it yields knowledge of what they need.

26. *Do you edit a store paper?*

The store paper gives you an opportunity to mail your store news to the home of every one in your territory. Space in each copy is reserved for locals of general interest and any advertising that the merchant individually desires.

27. *Do you get results from movie advertising?*

In some towns motion picture advertising produces real results. If yours is one of the towns where there is a popular motion picture house, try it out.

28. *Do you conduct store demonstrations?*

Many manufacturers will work with you and to your advantage. Demonstrations are of interest to all your farmer customers in this, that they learn a great deal about the equipment and its use on the farm.

29. *Do you keep an up-to-date mailing list?*

You should have a card of information pertaining to each family in your territory. You should know of many things they need, so you can send a letter to them at regular intervals.

30. *Are you building good will by thanking your customers with greeting cards, calendars or novelties?*

It will pay you to let them know that you appreciate their purchases. You can build up good-will and also keep your name before your customers.

Incorporates Wire Company.

With a capital stock of \$20,000, the Universal Wire Company, New York, has been incorporated by L. Hudson, F. W. Wilson, T. H. Hay, and B. L. Brandnor, 15 William Street, New York City.

Good Ideas for Window Display

*Practical Lessons from Exhibits in AMERICAN ARTISAN
AND HARDWARE RECORD Window Display Competition.
How to Get More Passers-By to Come into Your Store.*

WINDOW DISPLAY HELPS MOVE STOCK OF HUNTING GOODS.

In the various parts of the country there are hardware dealers who have stocks of sporting goods on hand which were purchased at somewhat higher levels of price than those now prevailing.

The problem which they are facing is that of moving stock of this nature into the sales columns.

This way leads not to profits, although as a device of last resort, it may eventuate in salvaging some of the original capital.

In other words, there need be little, if any, sacrifice of legitimate profits on the basis of original cost if the hardware dealer will arrange samples of his stock in a persuasive window display.

As a rule, sportsmen do not haggle over prices with



Window Display of Hunting Supplies, Planned and Put in Place by Otto J. Gress, for the Bunting Hardware Company, 810 Walnut Street, Kansas City, Missouri.

Admittedly, goods which linger on the shelves and in the storeroom of a hardware store are a liability instead of an asset.

That is to say, such commodities are carrying a disproportionate burden of overhead expense.

The money invested in their purchase is what bankers call "frozen capital."

In other words, this idle capital is not only earning nothing but—in a sense—is slowly depreciating much in the same way that some substances gradually lose part of their strength through evaporation.

Two ways are open for a solution of the problem thus involved.

One is to sacrifice such stock through bargain sales.

the same persistence that the average customer employs in protesting against what seems to be too high a price.

In order to achieve this desirable purpose, it is essential that hunting goods be arranged with every artifice of display to intensify the desirability of the articles.

Desire for possession is enhanced by such accessories of background and decoration as serve to suggest strongly the uses and pleasures to be derived from the purchase of these goods.

A praiseworthy example of this method of bringing hunting supplies into the sales columns is available in the window display shown in the accompanying illustration.

This display was planned and put in place by Otto

J. Gress, for the Bunting Hardware Company, 810 Walnut Street, Kansas City, Missouri.

Mr. Gress describes this exhibit as follows:

"Each year we design the Hunting Window to stimulate interest among the hunters. This window was very attractive we thought, and from the ceiling hung oak leaves and bitter sweet. There was a particularly fine hedge made of fall shrubbery.

"A shock of corn on the left was balanced by a similar shock on the right. You will notice a hawk among the leaves and a saucy rabbit at the base of the shock on the left side.

"A man in full hunting regalia attracts attention on the right side and one may spend hours before this window gazing at a variety of objects which one can not grasp in a casual glance, such as woodland animals, and autumn vegetables and foliage.

"The attractive little portable stove in the foreground should not be overlooked, as it is not an uninteresting object to the hungry hunter.

"The big coffee pot and the frying pan suggest delicious beverages and smoking hot bacon cooked in the open air."

New Hammer Undergoes Very Severe and Unusual Tests.

Extremely exacting tests were applied by the Underwriters' Laboratories, Chicago, to three samples of the new "Uncle Sam" line of Vaughan & Bushnell hammers.

The tests were carried on during a period of two months. At the expiration of that time, the use of the Underwriters' label was granted to the Vaughan & Bushnell Manufacturing Company, Chicago, Illinois, for these new hammers—the first hand tool line to receive the approval and label service of the Underwriters' Laboratories.

The three samples referred to were subjected to a vibrating and impact test on a vibrating machine by raising and lowering the handle permitting the tool to strike against a steel bar. This operation was continued for ten days at the rate of 40 operations a minute. Result: No apparent objectionable effects noted.

Three of the tools were immersed in water and allowed to remain for one month. Other tools were placed in an electric furnace and heated to 100 degrees Fahrenheit for twenty-four hours. Two other tools were heated for five hours to 200 degrees Fahrenheit. Other tools were left in a damp room for a period of about two months. After these soaking and drying tests, the tools were subjected to the impact and vibration test. Results: No apparent effects noticeable.

The faces of the tools were tested for hardness by the Brinell testing machine and the scleroscope. The claws were struck with a hammer and were bounded off a steel block to determine their resiliency. The tools were mounted in the Olsen machine to determine the strength provided by the Vaughan's Expansion



The Vaughan's Expansion Wedge.

Wedge as compared to the ordinary wedges. It took nine hundred pounds more to pull the handle through the head with Vaughan's Expansion Wedge.

Examinations of the tools indicated that there were no flaws or faulty construction in any of the tools inspected. The analysis showed a refined grade of steel. Factory methods show that uniform metal products can be assured. Every tool is examined and tested for flaws and defects at the factory.

Trade-Mark Is Registered for Aluminum Cooking Utensils.

Leyse Aluminum Company, Kewaunee, Wisconsin, has obtained United States patent office registration

Priscilla Ware
120,728.
Speaks for Itself

under number 120,728 for the trade-mark appearing herewith. The particular description of goods to which it applies is aluminum cooking utensils, such as pots, kettles, pans, and plates. Application for registration was filed March 15, 1920, and the Company claims the use of this trade-mark since September, 1919.

Articles of incorporation have been filed by the Runnells-Cummins-Emery Company, Milwaukee, Wisconsin, to manufacture domestic washing machines and laundry equipment. The company is capitalized at \$100,000.

Organizes to Manufacture Washing Machines.

The newly formed corporation has taken over the washing machine factory of Folsom-Miller Company at Markesan, Wisconsin.

Publishes Convenient Catalog of Stoves and Ranges.

Easy to handle and adequately illustrated is the new Catalog No. 29, issued by the Stove & Range Company of Pittsburgh, Pittsburgh, Pennsylvania. Ample descriptions are given as to measurements, service, and construction of the products listed in this catalog.

One of the opening pages is devoted to hints and suggestions concerning good drafts and bad drafts. reproduced with diagrams from AMERICAN ARTISAN AND HARDWARE RECORD. List prices are quoted throughout the catalog, thus making it available for use in showing customers the various stoves and ranges.

Begins Work on a New Stove Factory.

Work has begun on the erection of a stove factory at LaPorte, Indiana, for the Aloff Manufacturing Company.

The company will make stoves and ranges in the new plant, which is being built at a cost of \$30,000.

Hardware Dealers Meet in Galesburg, Beaver Dam and Hillsdale.

Group meetings were held recently by hardware merchants at Galesburg, Illinois, Beaver Dam and Antigo, Wisconsin, Hillsdale, Michigan, and Marion, Indiana.

Fifty dealers and employes were present at the Galesburg gathering, at which L. W. Sauter, of Sauter Brothers & Dixon, presided, with Field Secretary E. G. Aubrey in charge of the Question Box.

P. F. Brown, President of the Galesburg National Bank, told the merchants that he believed that times were improving; that it was not only advisable but imperative for them to buy in sufficient quantities to have their stocks in shape to fill the demand which in some lines is now stronger than the supply; that the bankers would stand behind them with credit accommodation, and that now was the time for every business man to put his shoulder to the wheel, in order that we might continue to progress.

A. G. Pedersen, of AMERICAN ARTISAN AND HARDWARE RECORD, spoke on "Factors That Make for Better Business," citing specific instances of hardware merchants whose business, under no better underlying conditions, have shown actual increases in dollars and cents over the figure for 1920.

Some of the methods used by such merchants were:

1. Adding new lines to stock, thereby offering a wider scope for appeal.
2. More aggressive advertising, in the form of specific offers of merchandise at definite prices.
3. The use of outside salesmen, either employed particularly for this purpose or selected from the regular selling force of the stores.
4. Demonstrations of various large items, such as electric or power washing machines, ranges, kitchen cabinets, vacuum cleaners, etc., in the homes of the prospects.

Field Secretary Aubrey brought out the point, among many others, that the names and addresses of the cash customers should be secured and added to the mailing, especially at this time.

At the Beaver Dam group meeting, Field Secretary B. Christiansen, of Stevens Point, was in charge.

Captain Gorby, of the Cyclone Fence Company, Waukegan, Illinois, spoke on "Three Leaks in the Hardware Business." The three leaks are inadequate accounting, dead lines and poor clerks. He also spoke strongly in favor of advertising, especially with reference to dead lines. He stated that dead lines should be strongly advertised in the local newspapers and that if this did not bring results solicitors should be sent out to make a house to house canvass. In the event that both of these means failed to move dead lines, the dead lines should be thrown to the junk heap and the store space given over to live lines.

At the conclusion of Captain Gorby's talk, Mr. Christiansen conducted a "Question Box."

Nearly sixty hardware merchants attended a banquet and group convention held at the Butterfield Hotel, October 20th. The banquet, which was served at 7 o'clock, was followed by a business session lasting until midnight. Field Secretary B. Christiansen was

in charge of the meeting.

Among the hardware dealers attending were: Rhinelander—Clarence McIntyre, Alfred Carlson, Otto Krunz, B. R. Lewis, T. S. Wood, Charles L. Nichols, L. D. Anner, S. H. Lewis, I. E. Helgeson, William Helgeson.

Mattoon—A. G. McKay, James P. Larson, W. B. Kramer, W. F. Meagher.

Gleason—Edward Manthey, A. Manthey, Conrad Strobel, Robert W. Manthey.

Antigo—Otto Hoeft, W. J. Wolhaupt, James Wagner, F. G. Wanek, W. C. Retzlaff, H. Ilsen, Guy W. Hacher, Fred Zwickey, Arthur Rifleman, John F. Weix, L. H. Schoening, John Hessel, A. L. Kommers, John G. Prokupek, W. J. Neufeld, H. F. Kohl, A. F. Schultz, J. H. Jirtle, B. A. Biersdorf.

Shawano—A. H. Seering, Charles Veslak.

Tigerton—Arthur Hews, L. C. Arps, S. Edward Hews.

Wittenberg—Rud Puchne.

Merrill—William Voight, O. F. Lambrecht, E. B. Schumacher.

Gresham—Andrew Mader.

Birnamwood—H. C. Boettcher, Chas. J. Roepke, William Beversdorf, H. L. Zuelke.

Wausau—J. O. Ketchera.

Fifty hardware men of Hillsdale and Lenawee counties met October 17th, at Hillsdale, Michigan.

A fine banquet was served, followed by addresses. Plans were made for holding a district convention again next year, probably at Adrian, and R. T. Davis of Adrian was elected chairman and A. C. LaRowe of Morenci vice chairman for that meeting.

Karl Katzenmeyer acted as chairman. Samuel Davis of Cleveland, who is known as the "Billy Sunday of Business," spoke on "Service and Cooperation."

There was a good deal of interest in a question box, conducted by George Leedle of Marshall. Everybody asked questions and everyone took part in the discussions.

Practically every town in Hillsdale county was represented at the convention and most of the towns of Lenawee county. The largest delegation was from the Wilcox hardware at Adrian, which sent ten men. Hardware stores of Morenci and Hudson had full representations.

Forty rail hardware dealers, members of the Indiana Retail Hardware Association, at a meeting held at Marion, October 19th, went on record to the effect that the price decline from the wholesaler to the dealer has been and will continue to be passed on to the customer.

The meeting was the sixteenth group meeting held by the State Association, and members were present from Grant, Tipton, Huntington, Wabash and Blackford counties.

G. F. Sheeley, Argos, Secretary, and C. W. Helgeson, Argos, Field Secretary of the State Association, were present and gave short talks. M. L. Lewis of the Marion Hardware Company acted as chairman of the meeting.

Preceding the business session a dinner was held in the banquet room of the hotel. A feature of the program was the Question Box discussion.

Brushes Need Special Care While Carried in Stock.

Of interest to hardware dealers who sell paint and varnish brushes are the instructions for the care of brushes while carried in stock.

Some dealers as soon as a shipment of brushes arrives unwrap the whole consignment and dump the brushes into the drawers or bins, where they are going to stay until sold.

What is the result?

In nine cases out of ten the drawers have not been cleaned for goodness knows how long. They are dark and they are warm.

This simply makes an ideal place for moths to live and the moths are not a bit backward about taking advantage of the opportunity.

The damage done to bristles by neglect of this kind runs into many dollars. The larvae of the moths eat the bristles and while they will not eat them all, they seriously impair the usefulness of the brush.

Another trouble that follows this indiscriminate dumping of brushes into a dusty drawer is that the brushes become filled with dust.

Some brushes are so dusty that when people take them home they think they had better wash them, and into a pail of water they go.

No new brush should be put into water as the cells of the bristles absorb the water and then when the brush is dipped into paint for work trouble starts as the paint is not absorbed and streaky work results.

Brushes get knocked about considerably when they are thrown into a drawer one on top of the other.

Brushes are sometimes so cut and scratched that customers refuse to buy them.

A little care in looking after the stock would have obviated this and left the brush when it was shown to the customer just as good as when it came from the factory.

Brushes should be looked after and not thrown around or left in places where they will get filled with dust and moths.

The dealer who can hand out a nice-looking, spotless brush to the customer will make sales a lot easier than if he shows one from which the dust comes in a cloud and which bears evidence of hard usage.

Says AMERICAN ARTISAN Is a Necessary as Salt in Food.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

In renewing my subscription, I want to say that AMERICAN ARTISAN is just as necessary as salt in food.

Yours truly,

C. R. OBERHOLTZER.

—, Indiana, October 21, 1921.

Honest Values Is Better Slogan Than Slashed Prices.

When you start to improve your business with a view to more profits, the place to begin is with the general appearance of your store.

Some merchants make their window displays so at-

tractive, timely and appealing that they are the talk of all who pass along the street.

This is personality. Nothing is more important than the attitude of the person behind the counter.

The manager of one store that has taught its clerks to smile declares that these smiles have increased the business of the store by hundreds of dollars.

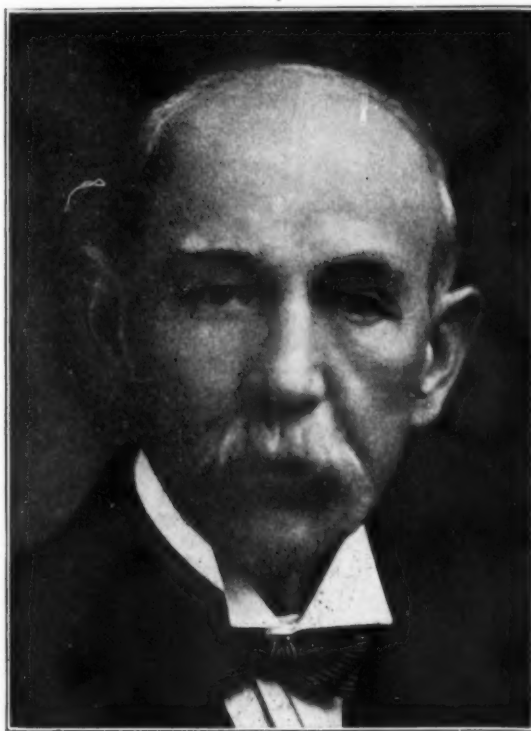
Personality of goods is also important. Nothing makes up for a lack of honest, downright quality. "Honest Values" is a better slogan than "Slashed Prices."

Fred J. Meyers Passes Away.

An exemplary life, devoted to good deeds, wise counsel and brotherly helpfulness, came to a tranquil end, Wednesday, October 19, 1921, with the passing away, at his home in Hamilton, Ohio, of Fred J. Meyers, president of the F. J. Meyers Manufacturing Company, of that city.

Unusual qualities of head and heart characterized his seventy-six years of existence. He demonstrated the age-old truth that ambition coupled with kindness never fails to reach any objective upon which the mind sets its purpose.

Fred J. Meyers was born in Cincinnati, March 28, 1845, and while still a young boy was taken by his father, to Covington, Kentucky, where he received his education in the parochial schools of that city. He learned the trade of fashioning articles from wire, and when only twenty years old he embarked in business for himself.



Fred J. Meyers.

In 1890 he organized the F. J. Meyers Manufacturing Company with a capital stock of \$125,000. He was elected first president of the company and held the position until the time of his death. In 1893 the business was transferred from Covington, Kentucky, to Hamilton, Ohio, and in 1898 reorganized with a larger scope of activity.

Upon locating in Hamilton, Mr. Meyers became active in the affairs of the city. He was a member of the Hamilton Club, the Butler County Country Club, and the Business Men's Club of Hamilton. Also he was treasurer of the National Association of Ornamental and Bronze Manufacturers.

He was optimistic, cheerful, ready to encourage and inspire others. He made it a point never to find fault with the life of another, feeling that each man had the working out of his destiny in his own hands.

He was the father of eight children, seven of whom survive him, namely, Mrs. Elizabeth Kramer of Cincinnati, Mrs. Catherine Weikert, Mrs. Jennie Arnold, Mrs. Julie Burg and Fred L. and Edward Meyers and Miss Theresa Meyers.

Trade Opportunities in Foreign Lands.

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

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Kansas.

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Al G. Wright of Anthony has purchased the Boyer, Bredenkamp, McNabb Hardware Company at Arkansas.

Missouri.

Ben J. Carr has sold his interest in the Carr-Morris Hardware Company, located on North Main Street, Hannibal, to his partner, Fenton B. Morris.

Ohio.

Tools and a complete line of general hardware will be added to the stock of the Bishop-Kennedy Company, 180 South High Street, Columbus.

H. J. Long and M. K. McKinley have purchased the hardware store of W. J. Kelly at Hayesville.

The Bayer Hardware Company, Columbus, has been incorporated with a capital of \$15,000. Incorporators are: L. Bayer, Fred M. Ellis, Steela M. Bayer, Nicholas J. Francisco and Harry Bayer.

Wisconsin.

Stanley Gibson bought Otto Greissers' interest in the Gibson Hardware Company at Medford.

Advertising Help and Comment

Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.

It is a distinct pleasure to reproduce the advertisement of Drennen Hardware Company, which measured 13 by 8¼ inches in the *Birmingham Post*, Birmingham, Alabama.

and other articles.

This feature of the advertisement produces the strongest possible effect of sincerity and straightforward dealing.

Typographically, the advertise-

The original of the Senour Hardware Company advertisement, shown in the accompanying illustration, measured four by five inches.

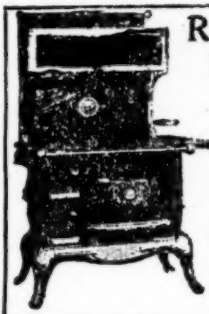
The type, therefore, was twice the size of that which appears in the reproduction herewith.

The liberal white space has the effect of uncommonly strong emphasis, so that the advertisement stands out from the page with a distinctness which is certain to arrest attention.

The offer of a \$1.00 safety razor free with every \$1.00 purchase serves to bring many customers to the store.

This is a legitimate device for such a purpose.

Special Fair Week Bargains In Stoves Ranges and Heaters



Rockwood Ranges

\$49.95
UP

Rockwood solid cast iron range, in plain satin finish, easy to keep clean. High chest, full nickel trimmed. Guaranteed to bake perfectly and give satisfaction. Specially priced at only \$49.95. Visit Our Store Department—The Largest in Birmingham.



Cannon Heaters

All sizes in Cast Cannon heaters. Extra heavy and lasting. Price now, \$7.95 to \$28.50



JEWEL GAS RANGES

Don't move the old, worn-out gas stove. Let us install a new Detroit Jewel. It will save its price in a few months. Ask for a demonstration. Prices

\$27.95 to \$87.50



Laundry Heaters

Made in Birmingham—serviceable and durable. We have them in stock in all sizes and specially priced for Fair Week \$6.50 to \$12.50

Fire Sets, Fire Shovels, Rakes



Tip Top Wash- ington and Jewel Hot Blast

We have the most complete line of heaters in the city and can save you big money on heaters that will give thorough satisfaction and longest service as well as save fuel.



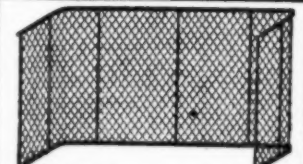
Water Heating Laundry Stoves

Keep the kitchen warm, heat water with no expense, complete with 6 turn coil. SPECIAL Fair Week Price \$16.95



FISH BOWLS

Half gallon to 2 gallons. Attractive prices.



FIRE GUARDS

At substantial savings in bought, early. Protect your family from the open grate. 30 inch \$2.95 34 inch \$3.50 36 inch \$2.75

SPARK GUARDS

Protect your rug and home also yourself and the children from the open grate with one of the Spark Guards at a low price now, \$1.50 and \$2.75 Now

Bowl and Pitcher \$2.97

Snow white, genuine porcelain, rolled edge, exactly as pictured Bowl and Pitcher—large size \$2.97.



Save \$15 to \$40 on Farm Wagons



The best Farm Wagon on the market—Studebaker, Milburn and Main. We have a complete stock of one and two horse wagons at prices that can't be beaten. Price here before you buy.

DRENNEN HARDWARE CO.

2013 First Ave.

Phone M. 6545

Not only is this advertisement helpfully illustrated so that it is easy to visualize the commodities, but the descriptions and selling arguments are terse and convincing.

Unlike many hardware retailers, this firm is not afraid to quote prices on stoves, heaters, ranges,

ment is well balanced, so that each article stands out distinctly as a complete unit of the collection of goods forming the subject matter of the text.

Just enough bold-faced type is used to attract attention and to accentuate prices.

The prime essential of gainful merchandising is to induce people to come into the store in order that the persuasion of salesmanship may be brought into play.

The finest stock of goods in the world and the utmost cheerfulness of service are of no avail if people do not enter to buy.

A certain percentage of regular customers drift away from the patronage of the store every year.

Replacements, therefore, are necessary. The list of customers of the store must be built up and increased.

This kind of advertising is one of the good ways to gain new customers.

Clark "King" \$1.00 Safety Razors Free

With \$1.00 purchase.

One to a customer while they last.

One Minute Car Service to All Parts of City.

Senour Hardware Co.

Seventh Avenue and Twenty-Second St. Phone 4064.

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Ben J. Carr has sold his interest in the Carr-Morris Hardware Company, located on North Main Street, Hannibal, to his partner, Fenton B. Morris.

Ohio.

Tools and a complete line of general hardware will be added to the stock of the Bishop-Kennedy Company, 180 South High Street, Columbus.

H. J. Long and M. K. McKinley have purchased the hardware store of W. J. Kelly at Hayesville.

The Bayer Hardware Company, Columbus, has been incorporated with a capital of \$15,000. Incorporators are: L. Bayer, Fred M. Ellis, Steela M. Bayer, Nicholas J. Francisco and Harry Bayer.

Wisconsin.

Stanley Gibson bought Otto Greissers' interest in the Gibson Hardware Company at Medford.

Advertising Help and Comment

Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.

It is a distinct pleasure to reproduce the advertisement of Drennen Hardware Company, which measured 13 by 8¼ inches in the *Birmingham Post*, Birmingham, Alabama.

and other articles.

This feature of the advertisement produces the strongest possible effect of sincerity and straightforward dealing.

Typographically, the advertise-

The original of the Senour Hardware Company advertisement, shown in the accompanying illustration, measured four by five inches.

The type, therefore, was twice the size of that which appears in the reproduction herewith.

The liberal white space has the effect of uncommonly strong emphasis, so that the advertisement stands out from the page with a distinctness which is certain to arrest attention.

The offer of a \$1.00 safety razor free with every \$1.00 purchase serves to bring many customers to the store.

This is a legitimate device for such a purpose.

Special Fair Week Bargains In Stoves Ranges and Heaters

Rockwood Ranges
\$49.95 UP



Rockwood solid cast iron range, in plate grain finish, easy to keep clean. High chest, full nickel trimmed. Guaranteed to bake perfectly and give satisfaction. Specially priced at only \$49.95. Visit Our Store Department—The Largest in Birmingham.



Cannon Heaters

All sizes in Cast Cannon heaters. Extra heavy and lasting. Price now, \$7.95 to \$28.50

JEWEL GAS RANGES



Don't move the old, worn-out gas stove. Let us install a new Detroit Jewel. It will save its price in a few months. Ask for a demonstration. Prices \$27.95 to \$87.50

Laundry Heaters



Made in Birmingham—serviceable and durable. We have them in stock in all sizes and specially priced for Fair Week. \$12.50 to \$19.95

Fire Sets, Fire Shovels, Rakes

Cannon Heaters

All sizes in Cast Cannon heaters. Extra heavy and lasting. Price now, \$7.95 to \$28.50

Tip Top Washington and Jewel Hot Blast



We have the most complete line of heaters in the city and can save you big money on heaters that will give thorough satisfaction and longest service as well as save fuel.

Water Heating Laundry Stoves

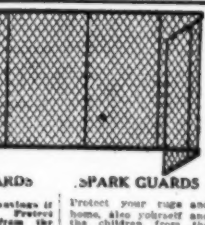


Keep the kitchen warm, heat water with no expense, complete with 6 turn coil. SPECIAL Fair Week Price \$16.95

FISH BOWLS

Half gallon to 3 gallons. Attractive prices.

FIRE GUARDS



At substantial savings it keeps you safe. Protect your family from the open grate.


36 inch \$2.25
48 inch \$2.50
60 inch \$2.75

SPARK GUARDS

Protect your rug and home. Also yourself and the children from the open grate with one of the Spark Guards at a low price now.

\$1.50 and \$2.75 Now

Bowl and Pitcher
\$2.97



Snow white, genuine porcelain, rolled edge, exactly as pictured. Bowl and Pitcher—large size \$2.97.

Save \$15 to \$40 on Farm Wagons



The best Farm Wagon on the market—Studebaker, Milburn and Buick. We have a complete stock of one and two horse wagons at prices that can't be beaten. Price here before you buy.

DRENNEN HARDWARE CO.

2013 First Ave. Phone M. 6545

Clark "King" \$1.00 Safety Razors Free

With \$1.00 purchase.

One to a customer while they last.

One Minute Car Service to All Parts of City.

Senour Hardware Co.

Seventh Avenue and Twenty-Second St. Phone 4664.

The prime essential of gainful merchandising is to induce people to come into the store in order that the persuasion of salesmanship may be brought into play.

The finest stock of goods in the world and the utmost cheerfulness of service are of no avail if people do not enter to buy.

A certain percentage of regular customers drift away from the patronage of the store every year.

Replacements, therefore, are necessary. The list of customers of the store must be built up and increased.

This kind of advertising is one of the good ways to gain new customers.

Not only is this advertisement helpfully illustrated so that it is easy to visualize the commodities, but the descriptions and selling arguments are terse and convincing.

Unlike many hardware retailers, this firm is not afraid to quote prices on stoves, heaters, ranges,

ment is well balanced, so that each article stands out distinctly as a complete unit of the collection of goods forming the subject matter of the text.

Just enough bold-faced type is used to attract attention and to accentuate prices.

Special Committee Will Draw Up Code for Installation of Warm Air Furnaces.

Committee to Be Composed of One Practical Installer, One Wholesaler, One Manufacturer and Three Engineers.

Committees recently appointed by the presidents of the National Warm Air Heating and Ventilating Association, the National Association of Sheet Metal Contractors, the Western Warm Air Furnace and Supply Association and the American Society of Heating and Ventilating Engineers met at Hotel Drake, Chicago, Tuesday, October 25th, for the purpose of considering plans of procedure in the matter of providing a code for installation of warm air heating apparatus.

Edward Norris, President of the Utica Heater Company, Utica, New York, was chosen Chairman and appointed A. W. Williams, Secretary of the National Warm Air Heating and Ventilating Association, Columbus, Ohio, to act as secretary of the meeting.

Twenty-one men representing the various branches of the warm air furnace industry were present, and every one took part in the very earnest discussions which lasted for two hours in the forenoon and nearly four hours in the afternoon.

Chairman Norris read the following statement which very concisely put the object of the meeting before those present:

"This meeting is called for the purpose of considering the preparation of a standard code covering the method of installation of warm air heaters for use by states or municipalities. Such codes have already been adopted by certain cities, and in other localities there is a sentiment for similar action.

"It seems clear that there would be great advantage in a uniform code to serve as a model for legislative action in all parts of the country. The adoption of varying codes in different localities would be most unfortunate, as it would work directly against the standardization so necessary to the advancement of any industry. It is also fair to assume that in preparing many codes for various places, some would result which would be unsound, and fail in giving proper protection to the public, at the same time working a hardship on manufacturers and contractors alike.

"A standard code, based on sound engineering and sound practice, having for its aim the real protection of the public and putting that above every selfish interest, is a work which may well enlist our enthusiastic effort. If thoroughly done, it will be a great benefit to the health of the country, and it should as well raise the standards and promote the growth of this great industry.

"At its convention held last May, the National Warm Air Heating and Ventilating Association adopted a resolution expressing itself in favor of such a movement and inviting the cooperation of the interested engineering societies and trade associations in the work. This meeting is the result of that resolution, and there are here represented, through their committees, the American Society of Heating and Ventilating Engineers, the National Association of Sheet Metal

Contractors, the Western Furnace and Supply Association, and the National Warm Air Heating and Ventilating Association. We, therefore, have present representatives of the engineers, manufacturers, jobbers and contractors—all vitally interested in the proper growth of this industry, and if we are willing to apply ourselves to this important task, I believe we shall fully succeed.

"It has been unfortunate that in the past there has been a lack of unity in this work, and it is the hope of those responsible for calling this meeting that we can in the future work together harmoniously and make real progress. Certainly, no broad use of a code will come unless it has the united backing of those who are most vitally interested in the industry. There is no real difference between the interests of any of the associations here represented, and there seems to be no real reason why we can not come close enough to agreeing on the fundamentals of a code to produce a measure which will have the support of all the interested bodies.

"We are all of us busy men, and we have come here because we consider this an important job and we want to get results. It would seem that this can best be done by starting this subject with a clean sheet and eliminating all references to past disagreements. This will not only save time, but help in keeping all of us in a frame of mind to devote ourselves exclusively to the problem at hand. Necessarily, in a work of this sort, differences of opinion will arise. This is only healthy and natural. But such differences of opinion in this committee can not be allowed to become personal matters if our work is to succeed."

It was readily agreed that while, of course, there were individual opinions as to what should be in the code and how the code could be made to function effectively, these were not the most impotent subjects for discussion and that the principal object of the meeting was to arrive at a decision as to how a code could be formulated that would have the backing of the entire industry and which in addition would be endorsed by an engineering society which has the reputation of not being influenced by biased or selfish purposes.

A number of suggestions were made as to the manner of procedure in preparing the code, and after a full and free discussion the following resolution was offered by George Harms, of F. Meyer & Brother Company, Peoria, Illinois.

"RESOLVED, that a committee of six, one each from the National Warm Air Heating and Ventilating Association, the Western Warm Air Furnace and Supply Association, the National Association of Sheet Metal Contractors and three from the American Society of Heating and Ventilating Engineers, be appointed to prepare a code and submit same to a future

joint meeting of the committees composing our group meeting today, with the request that a report be made by February 1, 1922.

"RESOLVED, that the members of this committee be selected by the various sub-committees now in this meeting."

Among those who took part in the discussion were the following:

Edward Norris, of Utica Heater Company, Utica, New York.

George Harms, of F. Meyer & Brother Company, Peoria, Illinois.

E. B. Langenberg, of Haynes-Langenberg Manufacturing Company, St. Louis, Missouri.

Arthur P. Lamneck, of W. E. Lamneck Company, Columbus, Ohio.

A. W. Menk, of Excelsior Steel Furnace Company, Chicago.

F. L. Nesbit, of Standard Furnace Supply Company, Omaha, Nebraska.

Oliver Gedeist, of Monitor Stove Company, Cincinnati, Ohio.

I. L. Jones, of International Heater Company, Utica, New York.

E. L. Jaynes, of the Northwestern Furnace and Supply Company, Minneapolis, Minnesota.

J. H. Hussie, of John Hussie Hardware Company, Omaha, Nebraska.

E. I. Dodd, of Standard Furnace and Supply Company, Sioux City, Iowa.

Professor James D. Hoffman, Director of Practical Mechanics Laboratories, Purdue University, Lafayette, Indiana.

Professor A. C. Willard, Director of Research Bureau of the National Warm Air Heating and Ventilating Association, University of Illinois, Urbana.

Jesse McHenry, of Bridge & Beach Manufacturing Company, St. Louis, Missouri.

John V. Patten, of Hero Furnace Company, Sycamore, Illinois.

The really important feature of the meeting—next to that of the decision to have a universal code drafted—was the spirit which was manifested by all of those in attendance.

Instead of a spirit of antagonism and of questioning of motives, which seemed to prevail before the meeting, those in attendance gave evidence of the fact that they are in accord on the all-important matter of improving the methods of installation and of so standardizing these various methods that the rules laid down for good work will be generally accepted.

The fact that the discussion came to such a successful end is due in a very large measure to the open-minded attitude of the chairman, Mr. Edward Norris, who preserved his pleasant smile and equanimity under conditions which to many men would have been extremely trying, for at times the discussion under the heat of the argument became rather acrimonious. However, after the "hot air" had had a chance for expansion under Mr. Norris' able guidance, everybody felt that something really worth while had been accomplished, and those who had felt somewhat strongly that their interests had been opposed from purely selfish purposes went away with the conviction that,

after all, the thing all were working for was the improvement of conditions in the Warm Air Heating field, and that the decision which was achieved was the best possible solution of the problem.

George Harms Says Quality Work Will Always Bring Good Profits.

In the October number of "Furnace Installation," the interesting house organ of F. Meyer & Brother Company, Peoria, Illinois, the following statement is published under the title of "George Harms' Own Page":

"The different trade papers have lately printed many letters from different sources on Furnace Codes and Legislation. There is considerable difference of opinion as expressed in these letters. I will not at this time criticize nor commend any of the letters that have been written. I believe, however, that it is an indication that the Industry is awakening to the fact that it is just as necessary properly to plan and install furnaces, as it is to do this with plumbing, electric lighting and other branches of the Building Trade.

"The future of any business depends entirely upon good work and this is particularly true of warm air heating.

"In my address to the National Association of Sheet Metal Contractors at their convention in Pittsburgh, I stated that Trade Development was brought about by different methods. One was to produce an article at a low price, so that everyone can buy it, and the other is just the opposite, by increasing the quality and making the price accordingly. The first method has been tried out by both furnace manufacturers and installers and is usually very short lived, whereas *quality* which applies to furnaces, furnace pipe and registers, will always be considered of most importance and this with good installation, will assure satisfied customers and a fair margin of profit.

"You are, no doubt, aware that through its Trade Development Committee, the National Association of Sheet Metal Contractors is preparing a book, covering the branches of sheet metal work and also Warm Air Heating.

"About one hundred pages will be devoted to furnace work and drawings of different styles of buildings, will be shown. It is the desire of the Committee that everyone interested in good furnace installation help prepare the work for this book and for this purpose, are asking the trade to send in any plans of heating that they may have installed or otherwise prepare plans showing ideal furnace installation jobs.

"You are, therefore, requested to consider this as an invitation to help with this work. Anything that you may have on your mind regarding the above, will be accepted by the committee and given proper consideration.

"E. B. Langenberg 4045 Forest Park Boulevard, St. Louis, Missouri, and I, are the Committee, who have this in charge; therefore, any plans or suggestions can be mailed to either of us. I am very confident that the readers of Furnace Installation are interested in High-Grade Warm Air Heating, and will assist the Committee in its work of Trade Development."

Practical Helps for Tinsmiths

No Two Jobs Are Exactly Alike. Therefore, the Sheet Metal Worker Has to Meet Each Difficulty as It Comes. Send Your Problems to Us. Let Our Experts Help You.

DESIGNS OF HEAD TOMBS.

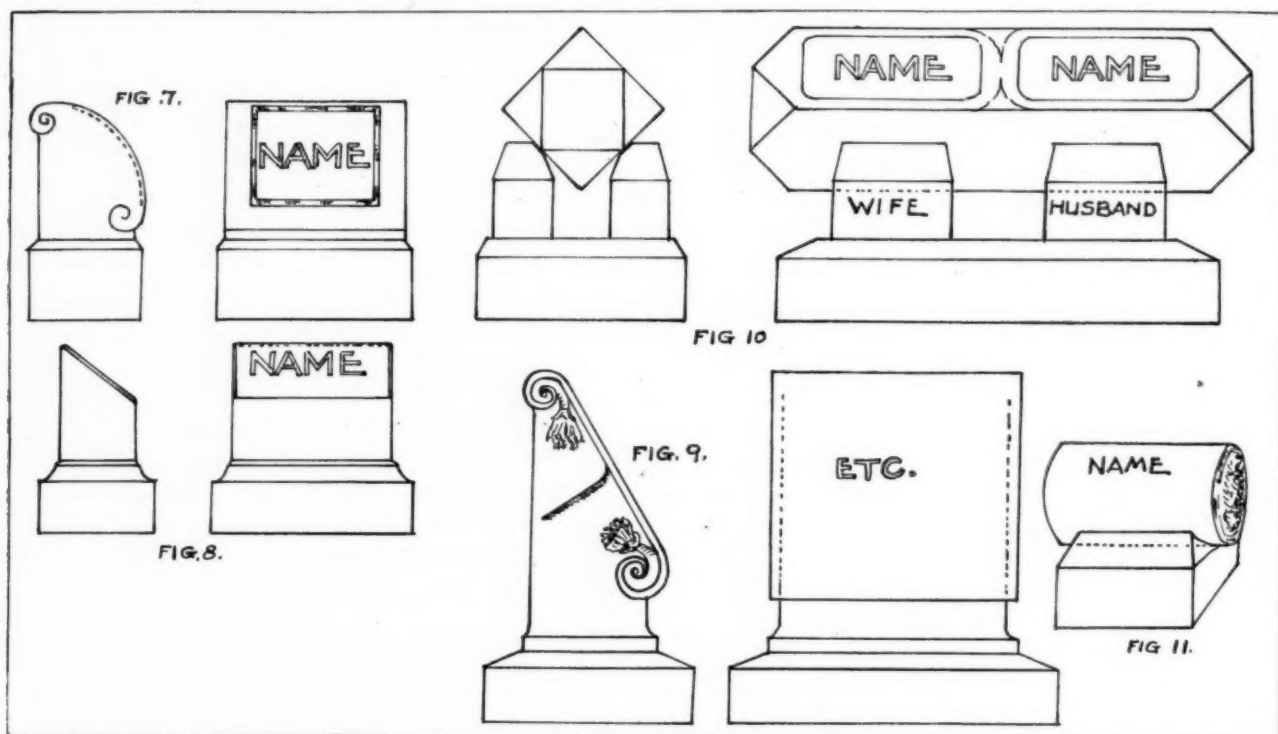
By O. W. Kothe, Principal St. Louis Technical Institute, St. Louis, Missouri. Written especially for *American Artisan and Hardware Record*.

In the examination of designs suitable for transposing stone designs into metal, a person is amazed at the great variety of designs suitable and that can be nicely worked into shape with very little difficulty.

So in this drawing we have several designs of head tombs that are simple to make and leave a good ap-

All these are very simply and easily designed and developed and leave a nice effect. Designs of this kind are made of a bronze or old copper finish style and would present a pleasing effect.

Of the simpler types of head tombs a great variety of designs can be created, of which the one in figure 11 is a sample. It is just merely a cylinder with the ends bumped into a rocked face shape and attached to the cylinder, which in turn rests on the base, and that is all there is to it.



Designs of Head Tombs.

pearance. In many instances the finished product looks better than the working drawing, as it sets out better. So in figure 7 we have a head tomb where the top face is of a curved design, finishing in scroll.

These scrolls may only be a slight indentation in the metal, as could easily be produced by a press. The name can be of the block letter design and either set out or set in the panel as in this case. This panel can also be easily stamped in place by means of a press.

At figure 8 we have another design that is still more plain and yet leaves a good appearance, while at figure 9 the face is on an incline and the ends finishing in a scroll.

A narrow fillet is used on the edge while the body of the stem is slightly curved to make place for the scroll as shown by the shaded line. Ornaments can be easily stamped right in the metal as shown.

At figure 10 we take up the design which indicates a large block with the corners chamfered on the ends and that rests between supports setting on a base.

Indiana Auxiliary Makes Plans for Two Big Conventions.

For the purpose of discussing plans for the Indiana Sheet Metal Contractors' convention and the convention of the National Association of Sheet Metal Contractors—both of which are to be held next May in Indianapolis—the Jobbers' and Salesman's Auxiliary to the Indiana Sheet Metal Contractors' Association met October 14th in Hotel Denison, Indianapolis, with representatives of the latter organization.

The meeting was called to order at 8 o'clock sharp by President E. W. Norman of the Auxiliary. A few selections of jazz music were rendered by Lawrence Hampton's colored band. Following this, Frank R. Jordan made an excellent talk on "Fire Prevention" work that is to be carried on, in which the local Sheet Metal Contractors can play a very important part.

Mr. Jordan was followed by Mr. Hiltner who covered the ground more fully by going into detail with

statistics showing the loss in life and dollars by carelessness of roofing and furnace installing, etc.

A rising vote of thanks for their talks rendered. More jazz music followed the above talks after which Senator Negley was introduced and talked on "Legal Points of Organization as Well as the Benefit It Is to the Public."

A luncheon and soft drinks were served along with the jazz music and clay pipes and tobacco were supplied the smokers. Talks were then made for and against exhibiting at the convention.

Among those who spoke at the meeting were F. A. Wilkening of Standard Metal Company, J. C. Henley of Tanner & Company, E. C. Folkening of Follansbee Brothers Company, J. M. Oliphant of Meyer Furnace Company, and H. A. Beaman of Haynes-Langenberg Manufacturing Company.

After discussions were made by members present,

it was unanimously decided to put on exhibits in a way that has never been equaled in the past.

One of the big features will be a model tin shop in full operation including office and drafting room. There will be one hundred and four exhibit spaces, ten by twelve feet, which will be offered to manufacturers and jobbers in a few weeks.

The entertaining features of this convention will be carried on in a way as never before.

Some exhibit spaces have been asked for to date by some of the leading manufacturers and jobbers of the country and the Auxiliary is daily receiving inquiries for membership. H. A. Beaman, Secretary of the Auxiliary, says that it would be advisable to those interested in sheet metal work to watch the trade papers for developments of the coming exhibit of State and National Conventions.

Explains How the Different Parts of the Automobile Radiator Are Made and Joined and Where Leaks Occur.

In the Cheaper Grade of Tubular Fin Core Radiators, Leaks Are Found in the Headsheets Due to Poor Soldering.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by E. E. Zideck, New York City

SIXTH ARTICLE.

In the standard tubular fin core radiator, such as Ford, Dodge, Studebaker, Maxwell, Case, Oakland, Nash, Cadillac, etc., etc., round brass or copper tubes of 3/16 inch inside diameter, conduct the water from the upper tank through a maze of fins, placed 3/16 inch apart, running to the lower tank.

Fins are there to deflect the air and to catch the cold of the air which, in turn, they impart to the tubes and their contents.

In a standard fin core, and in most of the tubular cores, the tanks have heavier brass plates or *headsheets*, perforated to admit the tubes.

These are soldered to the burrs of the metal. Perforations are made smaller than the size of the tube, and a burr is formed to give the headsheets a lap by which the solder holds on to the tube.

The fins have a similar burr around each perforation, and are holding to the tubes by solder, but it is the headsheet alone which contacts with water.

Many of the better grade radiators of the tubular kind are being constructed by both dipping the headsheets in molten solder and resoldering the tube ends to the headsheet burrs, and where this is done, leaks will be fewer.

But in the cheaper grade of the tubular fin core radiators, where the resoldering by hand is omitted, the repairer will find the leaks invariably in the headsheets, around the tubes where they enter the tanks.

The fins are merely baked on to the tubes. This is done by tinning the tubes before inserting them, and the assembled core is dipped in dipping fluid and put into the baking oven for the solder to melt and stick onto the tubes.

This process fastens the fins to the tubes but, where the perforations are too large for the tubes, the hold is slight and seldom lasts.

A close fit of the burrs in the headsheet around the tubes is the main hold the tubes have in it. Solder alone will not hold where the tubes rest loosely within the perforation, and as the heavy brass plate of which the headsheet is commonly made will not submit to vibrations, it is the solder around the tube that will break.

For the repairer it is of importance to know how the different parts of the radiator are made and joined.

This knowledge will enable him to recognize breaks and leaks in the radiator and proceed accordingly to repair them.

The standard tubular fin core is constructed with the aid of delicate machinery which turns out the tubes, perforates and edges the fins, cuts them to size, etc., by hand work mostly.

The tubes, when made in the machine and cut, must be dipped in molten solder. This is done by hand.

A wire basket is used and a number of tubes dipped at once, shaken in the basket, thrown upon a wire screen to roll down upon and left to cool.

The dipping operation must be done right if the tubes are to be tight and evenly coated with solder.

Should the solder be too hot, or burned, or unclean, the tubes will leak and there will be not enough of the solder left upon the tubes to stick to the fins.

If the solder is too cold, it will stick within the tubes and make them practically useless.

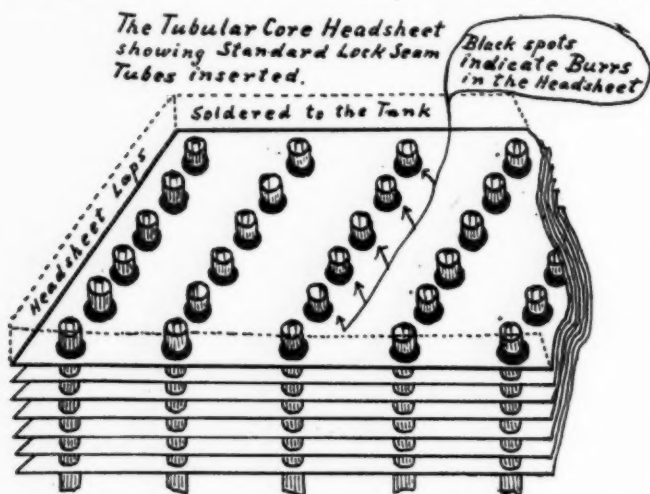
It is such solder-filled tubes which, because of

stopped circulation, will freeze in cold weather and burst open.

The machine which perforates the fins also edges them and cuts them to size. Thus both the tubes and the fins are made up quickly enough.

But the assembling of the tubes and the fins into a core, as yet must be done by hand. Forms are being used for the one hundred or more fin plates to lay in, and insert the one hundred or more of the tubes through them.

Still, the enormous job, which it seems, is accomplished in about ten minutes time. Now the assembled core goes into the oven to bake. The solder with



which the tubes are coated is being melted and the soldering of the ten thousand fin-burrs to the tubes done all at once.

The cleanliness of the dipping fluid, the cleanliness of the metal itself, the kind of dipping done upon the tubes, and the heat in the oven, the time the core is left in the oven—all that and many other small items—are determining factors in whether the fins will stick to the tubes or not.

Many times they do not stick, and it takes a solderer upward of an hour to resolder the fins to the tubes by hand—by the torch flame.

(To be continued.)

Michigan Trade Extension Board Meets in Lansing.

Having in mind the increase of business of the members of the Michigan Sheet Metal Contractors' Association, the Trade Extension Board was organized by officials of that organization in the belief that it would receive the sanction of the rank and file.

That this belief was well founded was proved at the meeting of the Trade Extension Board, held October 17th, in Lansing, Michigan. At the meeting it was announced that Trade Extension Board had obtained the approval of the entire Board of Directors of the Michigan Sheet Metal Contractors' Association.

Other proceedings of the meeting are reported by Frank E. Ederle and Otto Schwartz, chairman and secretary, respectively, of the Trade Extension Board, as follows:

"The adoption of a trade-mark on materials was discussed quite extensively and it was moved and supported that each delegate take up this subject with

his Association and ask for suggestions in the form of a sketch or drawing, of a suitable trade-mark favored by them, and submit same at our next meeting. Motion carried.

"Reports from delegates of the various Associations favored having the State Association copyright the trade-mark. It was moved and supported that each delegate having legal connections, obtain information from his attorney as to the advisability of incorporating our State Association in order to protect the use of this trade-mark.

"Harry Rhodes submitted a crest which has been adopted by the Grand Rapids Heating Contractors' Association. He was asked by this Board to take up with his Association, if they are willing to have the State Association copyright and adopt this crest so all members of our Association can use the same.

"The city of Jackson reported that they now have a Trade School started in their city. Delegates were requested to report what progress their Associations are making with the Trade Schools.

"A complaint was submitted by the Detroit Association which was referred to proper channels for attention.

"The Summer Outing for 1922 was brought up for consideration. A suggestion to charter a boat from Muskegon to Chicago and then to Milwaukee and return to Muskegon, was given by one of our delegates. Each delegate was instructed to get the opinion of the members of his Association and report at our next meeting.

"Meeting adjourned until Monday, December 5th, to be held in Lansing, at the usual hour and place."

Incorporates to Make Cornices.

The Frank L. Treuchet Company, Springfield, Massachusetts, has been incorporated with \$10,000 capital to make metal cornices. The incorporators are Frank Treuchet, George H. Williams, and H. C. Treuchet.

Organizes to Manufacture Sheet Metal Products.

For the purpose of manufacturing sheet metal products, the Hudson Skylight & Roofing Works, Bayonne, New Jersey, has been incorporated with a capital stock of \$50,000. The incorporators are John Shea, Samuel Bachner, and Emil Dannacher, 8 West 27th Street, Bayonne, New Jersey.

Finds Something New in Every Issue of AMERICAN ARTISAN.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

I receive your paper every Monday and there is always something new and up-to-the minute in it.

ELMER E. HAAG.

_____, Ohio, October 22, 1921.

Had we lived, I should have a tale to tell of the hardihood, the endurance and the courage of my companions which would have stirred the hearts of every Englishman. These rough notes and our dead bodies must tell the story.—Captain Robert F. Scott.

Max Walten Cites Proofs of Successful Application of Sheet Metal for Roofing.

Washington, D. C., Sheet Metal Contractor Tells of Successful Experience with Galvanized Iron, Tin Plate, Zinc, Lead and Copper.

At the National Convention of Sheet Metal Contractors, recently held in Pittsburgh, Max Walten, one of the successful sheet metal contractors of Washington, D. C., and a member of the Trade Development Committee of the Association, read the following very interesting and helpful paper on "Application and Superiority of Sheet Metal for Roofing Purposes":

The superiority of sheet metal over other roofing materials as well as the application of metal roofing has been presented to you by the most able sheet metal contractors in the country, as well as by the manufacturers of sheet metal.

It would be presumptuous on my part to give the impression that the statements I am about to make in regard to metal roofing originated with me. However, I would like to impress more forcibly upon your minds the necessity of promoting this branch of your work.

We have quite a variety of metals to choose from, of which tin is the most popular.

As for the application of the tin roof the master sheet metal workers' handbook is certainly a splendid guide. While the flat seam roofing method is clearly shown in this book as having no nails driven through the sheet, yet our firm has been called upon by the architects on several occasions to nail directly through the sheet under the seam using tinned nails, with good results, although we have always preferred to cleat the sheets.

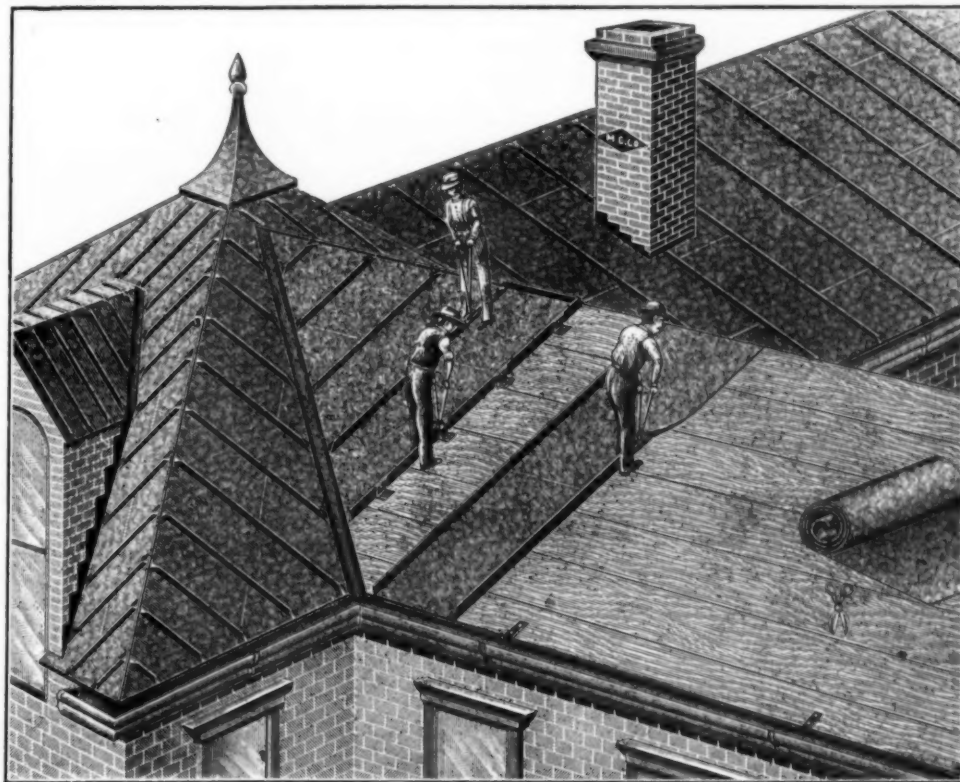
The question is often asked: "Can tin be laid on a concrete roof?" We have an example of tin laid on a concrete roof of a large government building in our city which is a credit to the trade. Wood batons were provided at intervals and the usual standing seams found midway between the batons.

Another example of tin roofing laid on a concrete roof occurred where flat seam tin was laid on an addition to a government building by our firm in 1910. We were careful to have the topping composed of the proper proportion of sand and cement to permit nailing directly into the concrete, as no batons or other fastening was provided. This roof appears to be in good condition today.

Many architects would prefer to specify sheet metal in place of other materials for roofing purposes where the roof is concrete, if the proper method of fastening the tin is suggested to them.

In this connection it might be well to mention that cinder fill, as it is termed, should have a good coating of top cement to provide for fastening, as well as protection of the metal against the cinders for seaming. We have laid tin gutter linings by cleating the tin with lead expansion shields and flat head brass screws in concrete gutters successfully.

Personally, I am anxious to hear what experience those present have had in laying sheet metal on concrete roofs. Many experiments have been conducted to show the durability of various grades of sheet metal. Why not have our association conduct some experiments, using a square or more each of concrete, hollow tile and gypsum block roof construction each on our buildings of today and establish the correct method of fastening the metal, using what experience we have had to date in conjunction with these experiments. And as actual proofs convince, the architects of the country



Typical Roof of Galvanized Sheet Roll, With Double Cross Locked Seams.

will readily see the advantage of specifying sheet metal roofs on the large office buildings, apartments, hotels and other buildings, which have concrete roofs.

Need for Device to Turn Edges and Lock Seams.

As for a standing seamed roof, we feel that the trade is much in need of a machine or device which will turn up the edges and lock seams after cleating without the tedious foot operation of the seamers in

use today. Several types have been tried out but evidently without success.

Electricity is available at most every building and the magnetic drill has good hammering qualities. Can some one of our craft with ability to make dies shape them, so tin can be edged and locked with speed and with less manual labor? Pneumatic tubes could also be used for the purpose by delivering the pump and motor to the building by truck and extending hose connections to the roof.

How can we expect the public to know that the tin on the roof of the home which they purchase from the speculative builder, is often the cheapest that is made? I would suggest that the master sheet metal workers collectively advocate only the use of tin plate which carries a twenty-pound coating or more to the box and strictly half and half solder.

Acknowledges Debt to Trade Papers.

Point out the fact that the upkeep of the home depends on a good roof, and when a prospective buyer is asking the salesman the question: "How is the house heated?" he should also ask what kind of a roof is on the house and whether it has been laid by a sheet metal contractor who employs skilled mechanics.

We owe a great deal to our trade papers for their cooperation and, although the articles on the "merits of metal roofing" are not read by the general public, yet the members of our Association become more interested in the subject by the wide publicity it has achieved.

Sheet lead with alloys added to lower the tendency for expansion and contraction is attracting considerable attention of the trade, and sheet zinc is also regarded as a splendid roofing material.

Copper roofing has been used extensively on Federal buildings in our city of Washington, D. C. The early buildings had sheet lead gutter linings, such as are used in England. Climatic conditions and very sudden changes or extreme changes in temperature have caused considerable trouble with expansion and contraction, so much so, that in nearly every case, the gutters have been replaced with copper.

A favorable method of copper roofing was to imbed galvanized ribs in the concrete slab, double seaming the copper over the rib and riveting through both the copper and rib for fastening. One of the important matters in connection with roof work is to keep the dampness from penetrating the walls where the wash of a stone cornice is not covered with metal to the very edge. We have a number of buildings in our city where the copper is run right through the walls, especially where stone or terra cotta balustrades exist. One corporation which owns a number of office buildings has copper flashing run entirely through the 18-inch walls, with good results. The cross-seams in this instance are not locked, just soldered one-inch lap.

Advises Against Heavy Copper for Roofing.

Our experience with copper roofing is that heavy gauges are not practical for roofing purposes. In one instance corrugated copper of a heavy gauge was used, fastened with brass screws. The metal would expand lifting the screws an inch or more from the roof and when the copper cooled at night the screws were al-

ways out of position, thus allowing the copper to vibrate and cause a good deal of trouble.

Our best results with copper roofing have been obtained where the copper was laid in sheets 14 by 20 inches, properly cleated and thoroughly soldered, the edges of the copper having been tinned by dipping them into a trough of molten solder an inch and one-half from the edges, and no strong solution of acid being used to brighten the edges for tinning. Incidentally, I wish to state that we have been experimenting with oxy-acetylene welding of sheet copper for roofing purposes and feel that there is a possibility of this method replacing the present method of soldering altogether.

Do you feel that the roof should be laid by a licensed roofer, just as a plumbing contractor must qualify before contracting for business? The loss sustained by poor application of roofing is great and the public should be protected by allowing only competent roof contractors to engage in the business. Often helpers who have seen men lay roofing engage in the business requesting the builders to furnish the material.

It has been stated recently upon good authority that there are 265 building codes in the United States and that the Secretary of Commerce has suggested that they be revised and standardized. National associations are to be invited to offer recommendations. This is an opportunity our Association should not overlook, as many of the codes were compiled without consulting our trade.

Vital Parts of Roof Are Made of Sheet Metal.

In making comparisons of sheet metal roofing with other materials, we must bear in mind that in every instance where other roofing materials are used sheet metal is used for all wall flashings, chimney flashings, skylight curves and outlet boxes and on steep roofs all valleys are first lined with sheet metal. In other words the vital parts of the roof upon which the tightness of the roof depends are all made of sheet metal today.

One of the strongest points which the sheet metal worker has to advocate metal roofing for is, the fire protection which such a roof affords. Many homes have been burned to the ground due to the sparks from open fireplaces or boiler chimneys setting fire to dry shingles or other inflammable materials and it has become necessary for the building department of our cities to pass regulations prohibiting the use of inflammable roofing material. Thus we feel aware of the constant danger unless we live under a metal roof. Aside from the advantages of fire protection the fire retarding qualities of a metal roof are a great benefit to the community as in many instances where fire occurred the sheathing and timbers burned almost entirely away and yet the flames were prevented from spreading to adjoining properties thus retarding the fire so that it could be gotten under control.

In conclusion, I would say that sheet metal is best adapted for roofing purposes and where other materials are used the property owners have but a substitute for a metal roof and very often inferior roofing at a greater expense. And as other materials are often removed and replaced with tin or copper, we feel it is another case of the survival of the fittest.

It's the Bumps that Wake Us Up.

All the Business Men Who Have Insane Ideas Are Not in Asylums for the Insane, by a Long Shot.

Scores of Sheet Metal Contractors Have Delusions Which Interfere with Their Success and Keep Them Poor.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Cleveland, Ohio.

I had occasion to spend Sunday in a fairly large town in the Middle West and I was lonesome. Jim Sprague, a sheet metal friend of mine lived in this town, so I called him up to give me a ride in his new flivver.

Jim, as usual, good hearted and accommodating, was glad to do it, so pretty soon he came over all lit up in his new bus. Where do you suppose he took me? You will never guess. So I will tell you. He took me over to the insane asylum. Really, he did.

Were you ever to an insane asylum? I don't mean as a member in good standing, but just for a visit. Well, you are missing a lot. Jim had a good pull with the guard, so we saw a lot of "nuts" that are not usually on exhibition. Each patient has his own pet delusion. Each one of them had something that he was "batty" about.

There was a man who thought he is the Kaiser, and another who had perpetual motion by the hair. One in particular had a delusion that someone was trying to rob him of all his money, so he had his safe with him full of tin money. The safe was an ordinary cigar box.

It is not my intention to tell you all we saw, only I want to say that I have learned that all of us folks who are called sane also have a pet delusion.

We are all "batty" over something. Believe me, brother, it is the truth.

When we got home, Jim said, "I hope you have enjoyed your visit."

"Yes," I answered, "I have enjoyed it a lot, and have learned a lot from those poor patients. Jim, I have learned a lesson in life that will last me a long time."

"You did, did you?" asked Jim. "What in Sam Hill could you have learned in an insane asylum? Tell me about it, will you?"

"Sure I will, Jim," I assented. "I want to tell you that I have learned that all of us are just common nuts,

and that most of us ought to get a room at that asylum for a week or so and get cured."

"Gee!" Jim exclaimed in surprise. "Is it as bad as all that?"

"Yes," I answered, "it is as bad as all that and worse. Here is what I have learned there this afternoon. I noticed that each one of those patients has some pet delusion which has caused his downfall. Let us just turn to ourselves as a comparison, Jim. We are in

business. We sheet metal men are part of the world's business men, and each one of us has some pet delusion that makes us or breaks us."

"I don't get you at all," Jim answered in a puzzled sort of way.

"Well then, just listen to me, and learn something," I began. "Take it in your own case. You are all right as a business man, but you have a pet delusion that business is so rotten, that there is no use in even trying to get it. You have set your mind on this thing, and it is hard to cure you of that thought. Yesterday you refused to order a bill of goods because you have a delusion that you will buy what you can not dispose of."

"Haw-haw-haw," laughed Jim. "So you think I am crazy if I am careful, do

you?"

"No. Not because you are careful," I explained, "but because you base your carefulness on a delusion. There is always business for the man who goes out to create it. If you do not go after business because your pet delusion compels you to think that there is no use in trying, you are as 'batty' as that Kaiser fellow. You think what is not true."

"Well, business is rotten," Jim insisted. "You know it is."

"It is not. Look at the Up-to-Date Sheet Metal Company on Main Street. They are running four men, and just hired that Bailey fellow who was working for you two weeks ago. I do not think that proves your argument," I said.

If you ever saw a cancer under the microscope, you would be surprised to learn that it is not offensive in the earlier stages of its development.

A cancer is merely a lot of cells which grow out of proportion to the surrounding cells. Thus, they become abnormal.

It is pretty much the same way with wrong ideas which develop into business cancers.

A man who allows himself to become possessed of a false notion of business, who gives way to gloom or pessimism, and permits his affairs to be profoundly influenced by this attitude, is only a millimeter's distance from the insane asylum where our friend Greenberg went with Jim Sprague and found so many interesting lessons for the insane who are on the outside of the bars.

"I guess you are right about that," admitted Jim.

"Now then," I spoke up with encouragement, "there is Sam Blake who has a pet delusion that there are no good journeymen. He has the delusion that no journeyman knows enough about sheet metal to build a tin box. This is a delusion that is insanity. There is our friend Bob Small who has a delusion that advertising is bad business. He told me that if his business needed advertising, he would quit at once. Just think of this, Jim, isn't that insanity?"

"I guess you are right," answered Jim with a smile.

"Then, there is Henry Kelly who has a delusion that because some furnace manufacturers install furnaces direct to the customer, there is no use in his handling furnaces. Do you call that sanity?"

Jim only smiled, but said nothing.

"There is Bill Ellison who has a pet delusion that the sheet metal business is the worst business on earth, and because it is as he thinks it is he must have his shop in the alley and have the dirtiest shop in town. Do you think that he is right?"

Jim just laughed and said, "I am glad that we did not stay in that 'nut' factory all day. If we did you would have a line on all the crazy thoughts of every sheet metal shop in town."

"Well I have," I said laughingly. "Look at your brother-in-law, Jack Clow. He has a delusion that bookkeeping systems are made for banks only and keeps his records in a ten cent ledger he purchased in the ten cent store. Do you call that right thinking?"

"I told him about that long ago," Jim exclaimed. "But he can't see it. I guess you are right about him."

"Of course I am right, Jim," I went on. "Take for instance Oliver over on the West Side. He has a delusion that all salesmen are crooks. He told me that only yesterday, and he believes it so hard that he orders through the mail. If that is not insanity, I'm a liar."

"O well," Jim agreed. "Oliver is an exception. We all know that he is off."

"How about Schneider?" I added. "He has a delusion that if he does a job on Sunday he need not charge overtime because he is the boss. Can you beat it, Jim?"

"No I can't," Jim admitted.

"Now look at Walter Heintz. You know him well," I continued. "He is a real good fellow, but his pet delusion is that every tinner in town is down on him, and the reason we want him in the association is to break him up in business. Do you call him sane?"

"He is a 'nut' right," Jim answered.

"Now take George Percell," I continued, "He has a pet delusion that Trade Magazines are all bunk—that AMERICAN ARTISAN AND HARDWARE RECORD is not worth having. Do you call this sanity? The articles by Kothe on Sheet Metal work alone are worth more than it costs. Jim, there is no use in talking, we all are 'batty' about something, and most of us have some crazy spot in our makeup."

Mr. Sheet Metal Man, what is your "batty" idea? What are you innocently cracked on? Get things right, and become happy. This is a great good world if we will only learn to believe it. So long.

Trade Acceptances Are Favored by Bankers.

From the banker's standpoint trade acceptances which are two-named paper, are considered better than a merchant's or manufacturer's own paper, for, unless an actual examination of the borrower's books are made by the bank or by reputable accountants the banker does not know just how good the outstanding accounts are. What possible offsets or claims are to be adjusted, or how long the accounts have been running. Furthermore, banks are limited by law from loaning to any one person, firm or corporation, more than a certain per cent of its capital and surplus; in the case of a national bank 10 per cent, but are not subject to this limitation in buying or discounting trade acceptances.

According to one of our ablest financial authorities, after Europe has replenished her stock of raw materials and food products and has replenished her purchasing power, we may look for a reconstruction boom. In that reconstruction boom, the first signs of which we should see in the early fall, we are sure to have more or less of European competition in the chemical, automobile, and numerous other lines, and it would seem, therefore, that merchants and manufacturers should begin to get their houses in order, and to improve the efficiency in their manufacturing, selling and other departments to the fullest extent, as well as adopting the most economical method of financing their business.

The logical method for accomplishing this, it would appear, would be by the use of the trade acceptance, for the reasons enumerated above. When these adjustments have been made we ought to enjoy a period of prosperity for many years to come, our export trade especially getting great benefit from it.

Notes and Queries.

"Ward" Safety Razor Blades.

From W. P. Brown and Company, Blue Rapids, Kansas. Who makes the "Ward" safety razor blades?

Ans.—Ward Safety Razor Company, Blue Island, Illinois.

"Samson" Hand Punch.

From Elmer E. Haag, 395 South 2nd Street, Newark, Ohio.

Please advise me who manufactures the "Samson" hand punch.

Ans.—Machine Appliance Corporation, 351 Jay Street, Brooklyn, New York.

Nickeloid.

From T. H. Norr, Piqua, Ohio.

Would you please inform me who manufactures nickeloid used to cover tables and kitchen cabinets?

Ans.—Merchant and Evans Company, 315 Champlain Avenue, Cleveland, Ohio; American Nickeloid Company, Peru, Illinois; National Sheet Metal Company, Peru, Illinois; Apollo Nickel Works, La Salle, Illinois.

Gravity Hinge.

From Forest City Hardware Company, 1105 Fourteenth Avenue, Rockford, Illinois.

Will you kindly advise me who manufactures gravity hinges?

Ans.—International Harvester Company, McCormick Works, Blue Island Avenue and Oakley Boulevard, Chicago, Illinois.

Weekly Report of the Markets

General Conditions in the Steel Industry. Review of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

CONDITIONS IN STEEL MARKET VARY CONSIDERABLY.

In analyzing the market for finished steel products, a divergence of opinion is the first thing that one runs up against, and, whereas, some interests report a decided falling-off in orders during the past week, others state that no such diminution is in evidence and that the increased rate of buying is being maintained.

Putting these two opinions side by side and taking into consideration the weakness in prices, the preponderance of evidence seems to be on the pessimistic side.

It is not thought that any distinctly unfavorable factors have developed, but the trade seems to be of the opinion that the prospect of lower freight rates in the very near future has influenced some consumers to delay orders, and that in a few lines the dropping off is seasonal.

The difference in demand, as for the past few weeks, is between light and heavy steel products.

Bars, plates and shapes, the heavy rolled products, continue in light demand.

Structural demand has appreciably fallen off of late owing to the advancing season and plate mills in the East are still down to a 20 or 25 per cent operation, but there is a slight improvement in bars in some districts.

However, prices on all of these items have been shaded to lower levels by the independents during the week, although the leading interest seems to be maintaining its last recently advanced price schedule. Tin plate buying has dropped and tin mill operations are already declining.

On the other hand, there is a continued demand for wire products and standard steel and cast iron pipe.

Merchant pipe is exceptionally strong and casing is more active.

Buying is still from hand-to-mouth to meet immediate requirements.

The threat of a strike does not seem to be exerting much influence on steel products consumers.

There has been no diminution of the speeding up in operations at the steel mills due to the increased volume of business taken during the past few weeks, however.

Today, the mills of the country are turning out steel ingots at the rate of about 40 per cent of capacity, with these of the leading interest doing about 47 per cent.

However, due to a slightly greater capacity and more intensive operations per mill the independents are turning out very nearly as much steel as is the leading interest.

As a whole, the steel plants of the country are producing steel at an annual rate not far from 22,500,000 tons as against the low point of 8,650,000 tons touched last July.

Steel.

The reduction of \$7 per ton on steel rails, as announced by the leading interest at the close of the past week, is based on very evident expectations of lower freight rates on iron, steel and the various items which go to make up pig iron, the ratio of these being from 5 to 7 cars of primary raw materials and fuel to turn out one car of pig iron.

The expectation of lower freight rates is especially significant in view of the present railroad crisis.

Judge Gary, chairman of the United States Steel Corporation, issued the following statement in connection with the price change:

"We have decided to recommend that our subsidiary companies reduce the selling price of standard rails to \$40 net ton base, f. o. b. our mills. The present costs of production do not justify this action, but it is hoped and expected that reductions in freight rates and otherwise, together with the larger operations will soon have a beneficial effect upon our costs."

The price reductions lowers open hearth rails from \$47 to \$40 a ton, and as Bessemer rails are always quoted \$2 a ton under the first grade the latter are now at \$38 a ton.

For fifteen years, between 1901 and 1916, Bessemer rails sold at slightly under \$28.

After that they advanced and all through 1918 sold at slightly above \$54.

In 1919 they dropped to a little less than \$45; in 1920 they went to \$55, and at the beginning of the current year they were reduced \$10 to \$45, and the present cut places them at \$38.

The open hearth rail has carried a differential of \$2 a ton over Bessemer ever since it came into use.

Copper.

Domestic demand for copper continues light but there is some inquiry for November and December shipment.

Electrolytic is held firmly at 13 cents for October, November and December shipment by most producers although it might be possible to shade this price for prompt shipment so far as one or two small producers and second hands are concerned.

The unsettled transportation situation is largely responsible for the light domestic demand at present.

It would be possible, however, to make water shipment into New England even if rail traffic were temporarily suspended.

The outlook for the railroads, however, is regarded as more encouraging.

There is little if any demand for electrolytic cop-

per for shipment after the first of the year so far as producers are concerned as the latter anticipate higher rather than lower prices after the turn of the year.

None of the copper producers in this country believe that it would be expedient to resume operations at the mines that are now closed until the Spring of 1922 and the most conservative do not expect conditions to be favorable for such resumption of the mining until July next year.

Tin.

The consuming demand for tin during the past few days has been small and as the purchases and sales by dealers and operators have about balanced one another there have been few orders sent to England.

Many consumers take the attitude that business prospects are too uncertain to warrant extensive purchases of tin, and furthermore as there are ample supplies in sight there is no occasion for them to cover their requirements so far ahead as they would do under normal requirements.

For months past they have bought on reactions and have retired when prices advanced, so their present actions are merely a repetition of what has occurred before.

Chicago prices increased as follows: Pig tin from 30¾ cents per pound to 31 cents and bar tin from 32¼ cents per pound to 32½ cents per pound.

Solder.

A considerable increase in Chicago prices of solder occurred during the week, amounting to more than \$2.00 per hundred. The prices now in effect are as follows: Warranted, 50-50, per hundred pounds, \$21.50; Commercial, 45-55, per hundred pounds, \$20.00; and Plumbers', per hundred pounds, \$18.50.

Lead.

In some quarters it is thought that the present prices for lead will remain unchanged over the balance of the year.

Buying is not of the proportions recently in evidence but the market is far from dull and the statistical position is showing increasing strength.

The cheaper prices are not by producers but come from second hands.

Prices in Chicago advanced 5 points, making the present quotations \$4.95 per hundred pounds for American pig lead, and \$5.70 per hundred pounds for bar lead.

Zinc.

There has been little change in the domestic market for zinc and the St. Louis price has been about 4.65 cents a pound for spot and October deliveries.

Some metal was offered by second hands in St. Louis at as low as 4.60 cents, while sales as high as 4.70 cents were reported. It is probable that certain desired brands commanded a premium.

Demand from galvanizers is still the mainstay to the market.

The market is very firm and it is stated that a considerable falling off of the present demand could be experienced without materially affecting it.

The shipments for October are expected to total

fully 25,000 tons, probably 10,000 tons in excess of output, provided the former rate of production has not been increased, and so far as learned it has not been.

There is room, however, for more reduction of stocks if the healthier tone of the market is to be maintained or improved, and as the price of slab zinc is not yet high enough to yield a profit with \$25 ore, the conditions are certainly against expansion.

Sheets.

There has been very fair booking of sheet business in the past week, both by the independents and by the leading interest. The bookings have been the best in black and next best in galvanized, while in blue annealed the bookings have been relatively light.

While the tonnage makes a large showing for a week and would make a fair showing if spread over a fortnight, it is by no means such a rush of business as would occur if buyers were covering their full prospective requirements to the end of the year, unless their requirements are to be very light indeed.

Producers of steel sheets in the Chicago district have not followed a recent advance of \$5 per ton made by eastern independents.

As a result consumers taking their supplies from Chicago are able to place their business at the former level, if mills are in a position to give the delivery they require.

Tin Plate.

The tin plate market is dull, but that means that it is in normal condition for this time of year. The September bulge in demand was altogether abnormal, being out of season, as emphasized in our reports at the time.

There is a fair distribution of business among the consuming lines that are active now, comprising practically all the general line consumers and excluding of course all the perishable foods as well as the sardine and salmon trade.

Stock plates are still much in evidence in the market and are a disturbing element as to prices as stock plates are freely offered at prices lower than the regular asking prices of mills for what is known as "production plate."

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$13.50 to \$14.00; old iron axles, \$18.50 to \$19.00; steel springs, \$13.75 to \$14.25; No. 1 wrought iron, \$12.50 to \$13.00; No. 1 cast, \$12.00 to \$12.50; all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 6¾ cents; light brass, 4 cents; lead 3¼ cents; zinc, 2 cents; cast aluminum, 9 cents.

Pig Iron.

The demand for spot shipments in carloads and small lots caused by a fear that a strike may occur makes up most of the present business in the Chicago pig iron market.

Larger inquiry is absent and is not expected to resume until the period of uncertainty is past. The market level ranges from \$21 to \$21.70.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry	\$21 70
Southern Fdy. No. 2.....	24 66
Lake Sup. Charcoal.....	33 50
Malleable	21 70

FIRST QUALITY BRIGHT TIN PLATES.

	Per Box
IC 14x20 112 sheets	\$11 25
IX 14x20.....	12 25
IXX 14x20.....	13 80
IXXX 14x20.....	15 15
IXXXX 14x20.....	16 60
IC 20x28.....	22 50
IX 20x28.....	24 50
IXX 20x28.....	27 60
IXXX 20x28.....	30 80
IXXXX 20x28.....	33 20

COKE PLATES

Cokes, 180 lbs....	20x28	\$12 70
Cokes, 200 lbs....	20x28	13 00
Cokes, 214 lbs....	IC 20x28	13 35
Cokes, 270 lbs....	IX 20x28	15 55

BLUE ANNEALED SHEETS.

Base.....	per 100 lbs.	\$3 38
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ONE PASS COLD ROLLED BLACK.

No. 18-20.....	per 100 lbs.	\$3 95
No. 22-24.....	per 100 lbs.	4 00
No. 26.....	per 100 lbs.	4 05
No. 27.....	per 100 lbs.	4 10
No. 28.....	per 100 lbs.	4 15
No. 29.....	per 100 lbs.	4 25

GALVANIZED

No. 16.....	per 100 lbs.	\$4 40
No. 18-20.....	per 100 lbs.	4 55
No. 22-24.....	per 100 lbs.	4 70
No. 26.....	per 100 lbs.	4 85
No. 27.....	per 100 lbs.	5 00
No. 28.....	per 100 lbs.	5 15
No. 30.....	per 100 lbs.	5 65

BAR SOLDER.

Warranted,	
50-50.....	per 100 lbs. \$21 50
Commercial,	
45-55.....	per 100 lbs. 20 00
Plumber's.....	per 100 lbs. 13 50

ZINC.

In Slabs	\$5 15
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SHEET ZINC.

Cask lots	11c
Less than cask lots.....	11 1/4-11 3/4c

COPPER.

Copper Sheet, mill base...	\$0 20 1/2
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LEAD.

American Pig	\$4 95
Bar	5 70
Sheet.....	
Full coils.....	per 100 lbs. \$7 80
Cut coils	per 100 lbs. 8 05

TIN.

Pig tin	31 c
Bar tin	32 1/2c

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

Coopers'.	
Barton's	Net
White's	Net

ALARM CLOCKS.

Big Ben and Baby Ben...	per doz. \$28 80
America	13 56
Tattoo	28 50

AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder..	18%
Loaded with Smokeless Powder	18%

Winchester.	
Smokeless Repeater Grade.	10 & 4%
Smokeless Leader Grade.	10 & 4%
Black Powder.....	10 & 4%

U. M. C.	
Nitro Club.....	10 & 4%
Arrow	10 & 4%
New Club.....	10 & 4%

Gun Wads—per 1000.	
Winchester 7-8 gauge..	10 & 7 1/2%
" 9-10 gauge..	10 & 7 1/2%
" 11-28 gauge..	10 & 7 1/2%

Powder.	Each
DuPont's Sporting, kegs..	\$11 25
" " 1/4 kegs	3 10
DuPont's Canisters, 1-lb..	56
" " kegs..	22 00
" " 1/4 kegs	5 75
" " canisters	1 00
Hercules "E.C." kegs.....	22 50
Hercules "Infallible," 25 can drums	22 00
Hercules "Infallible," 10-can drums	9 00
Hercules "E.C." and "Infallible," canisters.....	1 00
Hercules W. A. 30 Cal. Rifle, canisters	1 25
Hercules Sharpshooter Rifle, canisters	1 25
Hercules Bullseye Revolver, canisters	1 00

ASBESTOS.

Paper up to 1/16.....	10c per lb.
Millboard 3/32 to 1/4.....	10 1/2c per lb.
Corrugated Paper (250 sq. ft.).....	\$6.50 per 100 lbs.
Rollboard	11c per lb.

AUGERS.

Boring Machine...	40 @ 40 & 10%
Carpenter's Nut.....	50%

Hollow.	
Bonney's.....	per doz. \$30 00

Post Hole.	
Iwan's Post Hole and Well	30 and 5%
Vaughan's, 4 to 9 in., without handles..	per doz. \$14 00

Ship.	
Ford's	Net

AWLS.

Brad.	
No. 3 Handled.....	per doz. \$0 65
No. 1050 Handled	1 40
Patent ast'd, 1 to 4	35

Harness.

Common	per doz. \$1 05
Patent	" 1 00

Peg.

Shouldered	" 1 60
Patented	" 75

Scratch.

No. 1S, socket Handled	per doz. \$2 50
No. 344 Goodell-Pratt, list less.....	35-40%
No. 7 Stanley.....	per doz. \$2 25

AXES.

First Quality, Single Bitted (unhandled), 3 to 4 lb., per doz.....	14 50
Good Quality, Single Bitted, same weight, per doz.	13 00

BAGS, PAPER, NAIL.

Pounds ..	10	16	20	25
Per 1000..	\$5 00	6 50	7 50	9 00

BALANCES, SPRING.

Universal.	
Sight Spring.....	List less 25%
Straight	List less 25%

BARS, WRECKING.

V. & B. No. 12.....	\$0 45
V. & B. No. 24.....	0 75
V. & B. No. 324.....	0 80
V. & B. No. 30.....	0 85
V. & B. No. 330.....	0 90

BEATERS.

Carpet.	Per doz.
No. 7 Tinned Spring Wire..	\$1 10
No. 8 Spring Wire Cop- pered	1 50
No. 9 Preston.....	1 75

BELLS.

Call.	
3-Inch Nickeled Rotary Bell, Bronzed base.....	per doz. \$5 50

Cow.	
Kentucky	33 1/2%

Door.	Per doz.
New Departure Automatic..	Net

Rotary.	
3 -in. Old Copper Bell.....	Net
3 -in. Old Copper Bell, fancy	Net
3 -in. Nickeled Steel Bell..	Net
3 1/4 -in. Nickeled Steel Bell..	Net

Hand.

Hand Bell, polished.....	
.....	List plus 15-10%
White Metal.....	List plus 15-10%
Nickel Plated.....	List plus 10%
Swiss	Net

Miscellaneous.	
Church and School, steel alloys	30%
Farm, lbs..	40 50 75 100
Each	\$3 00 3 75 5 50 7 25

BEVELS, TEE.

Stanley's Rosewood handle, new list	Nets
Stanley Iron handle.....	Nets

BINDING CLOTH.

Zinc	55%
Brass	40%
Brass, plated	60%

BITS.

Auger.	
Jennings Pattern.....	Net
Ford Car.....	List plus 5%
Ford's Ship.....	" " 5%
Irwin	35%
Russell Jennings.....	Plus 15%
Clark's Expansive.....	33 1/2%
Steer's " Small list, \$22 00..	5%
" " Large "	\$26 00..5%
Irwin Car.....	35%
Ford's Ship Auger pattern Car	List plus 5%
Center	10%

Countersink.

No. 18 Wheeler's..	per doz. \$2 25
No. 20 " ..	" 3 00
American Snailhead ..	1 75
" Rose ..	2 00
" Flat ..	1 40
Mahe's Flat ..	1 80
" Snail ..	1 90

Dowel.

Russel Jennings.....	plus 20%
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Gimlet.

Standard Double Cut Gross	\$8 40
Nail Metal Single Cut	Gross \$4 00—\$5 00

Reamer.

Standard Square.....	Doz. \$2 50
American Octagon...	" 2 50

Screw Driver.

No. 1 Common.....	Each 18c
No. 26 Stanley.....	Each 70c

BLADES, SAW.

Wood.	
Atkins 30-in.	
Nos.	6 40 26
	\$8 90 \$9 45 \$5 40
Disston 30-in.	
Nos.	6 66 28
	\$9 45 \$10 05 \$9 45

BLOCKS.

Wooden	20%
Patent	20%

BOARDS.

Stove.	Per doz.
26x26, wood lined.....	\$14 45
28x28, " ..	16 95
30x30 " ..	19 00
26x26, paper lined.....	\$ 8 15
28x28, " ..	9 10
30x30, " ..	10 30

Wash.	
No. 760, Banner Globe (single)	per doz. \$5 25
No. 652, Banner Globe (single)	per doz. 6 75
No. 801, Brass King, per doz.	8 25
No. 860, Single—Plain Pump	6 25

BOLTS.

Carriage, Machine, etc.	
Carriage, cut thread, 1/2x6 and sizes smaller and shorter	60%
Carriage sizes larger and longer than 1/2x6.....	50-10%
Machine, 1/4x4 and sizes smaller and shorter.....	60-10%
Machine, sizes larger and longer than 1/4x4.....	50-10-5%
Steve	70-10%

Mortise, Door.	
Gem, iron	5%
Gem, bronze plated.....	5%

Barrel.	
Cast	Net
Wrought	"
Wrought, bronzed.....	"

<p>Flush. WroughtNet</p> <p>Spring. Wrought" Wrought, heavy....."</p> <p>Square. Wrought"</p> <p>BOXES. Mail. No.. 2 4 10 Per doz.\$18 00 \$23 00 \$29 00</p> <p>Mitre. Cast Iron\$9 50 Stanley's.....Net Prices Stearns, No. 2...per doz. \$48 00</p> <p>BRACES, RATCHET. Goodell-Pratt No. 408.....\$4 60 " " No. 410.....4 80 " " No. 412.....5 00 V. & B. No. 444 8 in.....4 65 V. & B. No. 333 8 in.....4 30 V. & B. No. 222 8 in.....4 00 V. & B. No. 111 8 in.....3 50 V. & B. No. 11 8 in.....3 05</p> <p>BURRS, RIVETING. Copper Burrs only..30% above list Tinaner's Iron Burrs only.....Net</p> <p>BUTTS. Steel, antique copper or dull brass finish—case lots— 3½x3½...per dozen pairs \$2 75 4x4....." " 3 80 Heavy Bevel steel inside sets, case lots—per dozen sets 7 50 Steel bit keyed front door sets, each1 80 Wrought brass bit keyed front door sets, each... 3 25 Cylinder front door sets, each7 00</p> <p>CALIPERS. DoubleNet Inside and Outside....." Wing"</p> <p>CANS. Milk. Ohio. Gals. 5 8 10 Each\$3 65 \$4 45 \$4 70 Gem. Gals. 5 8 10 Each\$3 85 \$4 95 \$5 20 Jersey or Holstein. Gals. 5 8 10 Each\$4 15 \$5 60 \$5 90</p> <p>CAN OPENERS. See openers.</p> <p>CARRIERS. Hay. Diamond, Regular...each, Nets Diamond, Sling....." "</p> <p>CARTRIDGES. See Ammunition.</p> <p>CASTERS. Standard—Ball Bearing,50 & 10% Bed40% Common Plate. Brass Wheel15% Iron and porcelain wheels, new list50% Philadelphia Plate, new list50% Martin's40%</p> <p>CATCHERS, GRASS. No. 160S.....per doz. \$12 25 No. 165S....." 14 01</p> <p>CEMENT, FURNACE. American Seal, 5 lb. cans, net \$0 45 " " 10 lb. cans, " 90 " " 25 lb. cans, " 1 87 Asbestos, 5 lb. cans, " 45 Pecora, 5 lb. cans, " 45 " 10 lb. cans, " 90 " 25 lb. cans, " 1 87</p>	<p>CHAINS. Breast Chains. With Slide....doz. pairs, \$5 50 Without Slide.. " 5 08 Doubleback ... " 9 35 With Covert Snaps " 6 38</p> <p>Picture Chains. Light brass, 3 ft..per doz. 1 25 Heavy brass, 3 ft. " 1 75</p> <p>Sash Chain. (Morton's) Steel, per 100 ft. 0\$2 50 23 10 13 60</p> <p>Champion Metal. 0R5 40 2R5 60 1R7 75</p> <p>Champion Metal.—Extra Heavy. 1H\$9 50</p> <p>Cable Sash Chains. Steel.....List Net Plus 15%</p> <p>CHALK, CARPENTERS'. Blueper gro. \$2 00 Red2 00 White1 80 Common White School Crayon0 30</p> <p>CHIMNEY TOPS. In bags.....per bag \$1 80</p> <p>CHECKS, DOOR. CorbinNet list RusswinNet list</p> <p>CHISELS. Cold. Good quality, ¼ in., each \$0 44 " " ½ in., " 0 28</p> <p>Diamond Point. V. & B. No. 15, ¼ in.....0 23 V. & B. No. 15, ½ in.....0 48</p> <p>FIRMER BEVELLED. Berg's (Swedish). ½-inch.....per doz., \$ 4 45 1 " " " 7 15 1½ " " " 10 15 2 " " " 17 15 2½ " " " 26 95</p> <p>Round Nose. V. & B. No. 65, ¼ in.....0 33 V. & B. No. 65, ½ in.....0 44</p> <p>SOCKET FIRMER. Berg's (Swedish). ½-inch.....per doz., \$11 95 1 " " " 16 75 1½ " " " 23 95 2 " " " 35 95</p> <p>Caps. V. & B. No. 50, ¼ in.....0 29 V. & B. No. 50, ½ in.....0 64</p> <p>CHUCKS, DRILL. Goodell's, for Goodell's Screw Drivers.....List less 35-40% Yankee, for Yankee Screw Drivers\$6 00</p> <p>CHURNS. Anti-Bent Wood, Gal. 5 7 10 Each\$3 00 4 60 4 85 Belle, Barrel.....65 & 7½% Common Dash, Gal. 5 7 Per doz.....\$17 00 19 00</p> <p>Adjustable. Martin's20% No. 63, Screw.....20%</p> <p>Cabinet. Screw20%</p> <p>Carpenters'. Steel Bar...List price plus 20%</p> <p>Carriage Makers'. 2½-inch.....per doz. \$ 7 00 5 " " " 14 00 8 " " " 28 00 12 " " " 42 00</p> <p>Quilt Frame. No. 30, Ball and Socket, 2¼-in. head..per gross \$13 00 No. 50 Ball and Socket, 3¼-in. head..per gross 14 50</p> <p>Hose. Sherman's, brass, ¼-inch, per doz.....\$0 48 Double, brass, ¼-inch, per doz.1 20</p> <p>Saw Filers. Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25.</p>	<p>CLAWS, TACK. Wood hdl. No. 10...per doz. \$1 15 Forged steel, wood hdl. " 2 15 Solid steel3 25 Giant50</p> <p>CLEAVERS. Family. Beatty's, inch .. 7 8 9 10 Per doz..\$25 10 27 50 30 50 33 50</p> <p>CLEAVISES. Malleable10c lb.</p> <p>CLIPPERS. Bolt (Carolus). No. 0.....\$2 50 No. 1.....3 25 No. 2.....4 25</p> <p>CLIPS. Axle65@5%</p> <p>Damper. Standardper doz. 70c Troy35c</p> <p>Home50c</p> <p>COLLARS, STOVE PIPE. Lacquered. Inches5 6 7 Fancy pattern, per doz.....65c 75c \$1 00</p> <p>COMPASSES. Carpenters'15%</p> <p>COPPERS—Soldering. Pointed Roofing. 3 lb. and heavier....per lb. 40c 2 lb.45c 2½ lb.45c 1½ lb.55c 1 lb.60c</p> <p>CORD. Picture. White Wire.....60 & 5%</p> <p>Sash. Spot, No. 7.....per lb. 65c Common, No. 7....." 40c</p> <p>COTTERS, SPRING. All sizes.....\$7½%</p> <p>COUPLINGS, HOSE. Brass.....per doz. \$2 25</p> <p>CRADLES, GRAIN. Morgan's Grapevine.per doz. \$45 00</p> <p>CUT-OFFS. Standard gauge.....35% 26 gauge.....20%</p> <p>CUTTERS. Glass. Red Devil.....Net</p> <p>Meat. Enterprise—Nos. 5 10 12 Each\$2 50 \$4 25 \$3 75 Nos. 22 32 "\$6 50 \$8 50</p> <p>Pipe. Saunders's, Nos. 1 2 3 Each\$1 85 2 75 6 75</p> <p>Slaw and Kraut. Per doz. 4-knife Kraut.....\$20 00-55 00 3-knife Kraut, 8x27 in.13 00-18 00 1-knife Slaw.....3 50 2-knife Slaw.....3 00</p> <p>Washer11 00</p> <p>DAMPERS, STOVE PIPE. Diamond. 6-inch.....per doz. \$1 50</p> <p>DIGGERS. Post Hole. Eureka.....per doz. \$15 75 Iwan's Split Handle (Eureka) 4-ft. Handle...per doz. 15 00 7-ft. Handle...per doz. 20 00 Iwan's Hercules pattern, per doz.....18 00 Dividers, Wing25%</p>	<p>DRILLS. Blacksmith's Twist (New List)40%</p> <p>Breast. Millers Falls No. 12, per doz.\$52 50 Millers Falls No. 112, per doz.32 00</p> <p>Hand. Goodell's Automatic. No. 01.....each \$1 00 No. 03....." 2 00 Goodell-Pratt No. 4½, each 3 00 Goodell-Pratt No. 379, " 4 00</p> <p>Reciprocating. Goodell's3 20</p> <p>DRIVERS, SCREW. StandardNets Lock Ferrule" Clark's Interchangeable... " Goodell's Spiral....." Yankee Ratchet....." " Spiral"</p> <p>EAVES TROUGH. 70-20% off Standard List. MilcorNet</p> <p>ELBOWS—Conductor Pipe. Galvanized Steel, Tin and Terns, Plain Round or Round Corrugated, 2 to 6 inch, Std. gauge...60-10-5% 2 to 6 inch, 26 gauge...40-10-5% 2 to 6 inch, 24 gauge...15-10-5% MilcorNet</p> <p>Square Corrugated. Standard gauge.....45-10-5% 26 gauge.....30-10-5% MilcorNet</p> <p>ELBOWS—Stove Pipe. 1-piece Corrugated, Uniform. Dox. 5-inch\$1 50 6-inch1 60 7-inch2 10 Uniform, Collar Adjustable. Dox. 5-inch\$1 90 6-inch2 00 7-inch2 50</p> <p>ENAMEL. Per doz. Black Silk Air Drying. No. 1, ¼ pt. can with brush\$1 95 No. 2, 1 pt. can with brush 3 50</p> <p>Wire Screen Enamel. Black Silk (Black only). Per doz. ¼ pt. friction top can....\$2 00 1 pt. friction top can....3 00 1 qt. friction top can....5 40</p> <p>FACES, WOOD. 50% off list.</p> <p>FASTENERS, STORM SASH. Shroeder'sper doz.</p>
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GALVANIZED WARE.

	Per doz.
Pails (Competition), 8-qt.	\$2 00
10-qt.	2 35
12-qt.	2 50
14-qt.	2 80
Wash tubs, No. 1.	6 50
No. 2.	7 50
No. 3.	8 50

GARAGE DOOR HARDWARE.

StanleyAll net
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GAUGES.

Cream Fall.	
Fairmountper doz. \$3 75

Marking, Mortise, etc.Nets
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Wire.	
Diaston's25%

GIMLETS.

Discount65% and 10%
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GLASS.

Single Strength, A and B,	all sizes.	81%
Double Strength, A and B,	all sizes.	83%

GLOVES.

	Per doz.
6-oz. knit wrist gloves	\$1 00
8-oz. knit wrist gloves	1 20
10-oz. knit wrist gloves	1 45

GLUE.

	Per lb.
B. Amber	35c
A. White	40c
H. S. Amber	32c

Liquid.	
Army & Navy	.....40%
Le Page's—	
List "A"	.....37½%
List "B"	.....35%
List "C"	.....25%

GREASE, AXLE.

	per gro.
Frazer's	\$13 00
Hub Lightning	7 50

	15 lb.	25 lb.
Frazer's	\$1.00	\$1.50
Hub Lightning	90c	25 lb. \$1.21 each.

GRINDSTONES.

	7	8	10	12
Inches				
Prices on application.				

Mounted.	
Ball Bearing	1 2 3
Prices on application.	

GUNS.

Iver Johnson Champion Single	
Barrel Shot Guns	.....Net
Double Barrel, Hammerless"

HAFTS, AWL.

Brad.	
Common	.....per doz. \$0 35

Peg.	
Patent, plain top	" 60
Patent, leather top	" 80

Sewing.	
Common	" 24
Patent	" 55

HAMMERS, HANDLED.

	Each, net
Blacksmiths, Hand, No. 0.	
26 oz.	\$1 35
Engineers', No. 1, 26 oz.	1 35
Farriers', No. 7, 7 oz.	1 41
Machinists', No. 1, 7 oz.	1 06

Nail.	
Vanadium, No. 41½, 16 oz.	each 1 56
V. & B., No. 11½, 16 oz.	each 1 13
Garden City, No. 11½, 16 oz.	each 94

Tinner's Riveting, No. 1, 8 oz.	each 80
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Shoe, Steel, No. 1, 13 oz.	each 78
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Tack.	
Magnetic.	
No. 5, each	1 00

HAMMERS, HEAVY.

Farriers'20%
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Masons'.	
Single and Double Face50%

HANDLES.

Agricultural Tool.	
4½-inch, plainper doz. \$3 50

Auger.

Common Assorted, per doz.	\$0 75
Pratt's Adjustable, Nos. 1 & 2, per doz.	6 00
Ives' Adjustable, per set	1 35

Axe.

Hickory, No. 1	.....per doz. 4 00
Hickory, No. 2	2 50
1st quality, second growth	6 00
Special white, 2nd growth	5 00

Chisel.

Hickory, Tanged, Firmer,	
Assortedper doz. 55c
Hickory, Socket Firmer,	
Assortedper doz. 70c

Coal Pick40%
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Drifting Pick40%
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File, assortedper doz. 30c
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Hammer and Hatchet.

No. 1, per doz.	\$0 80
Second growth hickory, per doz.	1 40

Hay and Manure Fork, Handles, Strap and Ferruleper doz. \$7 00
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Screw Driver.

Assortedeach 6c
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Shovel and SpadeNet
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HANGERS.

Door.	
MatchlessNet
ReliableNet
Richards25%

Garage Door.

(See Garage Door Hdw.)	
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Conductor Pipe.	
Iwan's Perfection50%
Milcor PerfectionNet

Eaves Trough.	
Steel hangers30%
Triple twist wire	.....10%
Milcor Eclipse	.....Net
Milcor TriplexNet
Milcor MilwaukeeNet

HASPS.

Hinge, Wrought, with staples	Net
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HATCHETS.

	Per doz.
Size No. 2 extra quality	
broad	\$19 00
Competitive Grade	13 00 up
No. 2 Warranted Shingling	14 25
Competitive Forged	9 75

HAY RACK BRACKETS.

Wenzleman's No. 1	.....per doz. sets \$18 00
Wenzleman's No. 2	.....per doz. sets 19 20

HINGES.

Blind.	
Clark's Gravity	
No. 1	.....per set 45c
No. 2	" 88c

Gate.

Clarks	1 2 3
Hgs & Litch, ea.	85c 1 10 2 40
Hinges only—	
Upper	\$1 25
Lower	1 55
Latches only—	
No. 1	each 28c
No. 2	" 28c

Screen Door.

1751—3x3	.....doz. \$2 00
1753—2½x2½	" 1 95

Spring.

Chicago	.....Add 10% to list
Gem	.....25%
Matchless	.....40%
New Idea	.....per gross \$6 90

Wrought Iron.

Per 100 pairs with screws:	
Light Strap Hinges, No. 3	\$12 00
Heavy Strap Hinges, No. 4	15 75
Light T Hinges, No. 3	12 10
Heavy T Hinges, No. 4	20 00
Extra Heavy T Hinges,	
No. 4	21 50

Screw Hook and Strap.

6 to 12 in.	.....per 100 lbs. \$7 75
14 to 20 in.	" 7 50
22 to 36 in.	" 7 25

Screw Hook and Eye.

¾ in.per doz. pair \$2 00
¾ in.	" 3 50
¾ in.	" 5 00

HOES.

GardenNet
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HOOKS.

Awning, No. 60Net
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Belt.

Brown's70&5%
Jones'65&5%

Box.

No.	8 10 12
Each	\$0 29 0 77 0 86

Bush.

Common Axe Handle,	
per doz.	\$20 00

Chain.

Inch.	¾ 5/16 ¾ 7/16 ¾
Pr. 100	\$7 60-8 10 9 75 11 50 12 60

Clothes Line.

Japanned	.....per doz. 35c@1 00
Galvanized	" 65c@2 25

Conductor.

Conductor hooks20-10%
Milcor	.....Net

Corn.

Common, riveted, red, per dz.	Net
Little Giant	" "

Grass.

Common Nos. 1 3 5 7	
Per doz.	\$4 25 3 25 3 40 3 50

Hammock.

With plateper doz. \$1 00
With screw	" 95

Picture50%&50%&10%
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Potato and ManureNets
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HOSE.

	Per ft.
¾-inch molded reel	15c
¾-inch 3 ply duck	15c
¾-inch 4 ply duck	17½c
¾-inch 5 ply multiple	13c

HUSKERS.

Boss.	
Nos.	B E
Per doz.	New Nets
No. 59per doz. New Nets

Plane.

Wood BenchAdd 10% to list
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IRONS.

Sad.	
Charcoalper doz. \$11.00
Common, polished, per 100 lbs.	7 75
No. 70 Asbestos	\$1 50 net
No. 100	1 75 net
Common, nickel plated	8 25
Mrs. Pott's,	
No. 50 J, Enterprise, per set	Nets
No. 55 J,	" "
No. 50 T,	" "
No. 55 T,	" "

JACKS.

Wagon.	
Richard's No. 1	.....per doz. \$15 50

Oliver,	
Nos.	0 00
Each	\$0 60 \$0 80

Standard,	
Nos.	1 2
Each	\$0 60 \$1 00
R-W	

Big Lift	.....40%
Tiger	.....40%

KETTLES.

Brass	.....15%
Cauldron	.....40&5%
Copper	.....per lb. 27
Maslin	.....40&10%
Sugar	.....50%

KNIVES.

Beet Topping.	
Clyde, 9-in. Scimitar Blade,	
doz.	25%
California	25%

Butcher.

Beechwood Handles, 6-inch blade	.....25%
Beechwood Handles, 7-inch blade	25%
Beechwood Handles, 8-inch blade	25%

Cooper's Hoop25%
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Corn.

Clipper25%
Disston's No. 2	25%
Earle's	25%
Woodford	25%

Drawing.

Standard25%
Adjustable	25%
Barton's Carpenters'	25%

Hay.

Iwan's Solid Socket	.....25%
Heath's	25%
Iwan's, Sickle Edge	25%
Iwan's Imp'd Serrated	25%

Hedge.

Challenge	.....25%
Disston's No. 1	25%

Mining.

Common, Single	.....25%
Common, Double	25%
Streeter, 4-blade	25%
Streeter, 6-blade	25%

Putty.

Common	.....25%
Landers	25%

Scraping.

Beech Handle	.....25%
Lander's	25%

KNOBS.

Door.	
Mineral	.....per doz. \$2 00
Porcelain	" 2 00
Jet	" 2 00

LADDERS.

Step.	
Common, per ft.	23c
Common, with Shelf, add 10c.	
IXL	34c
Challenge, 6 to 9 ft.	55c
10 to 16 ft.	60c

LANTERNS.

	Per doz.
Monarch tin, hot blast	\$9 50
Diets No. 2 cold blast	14 50
Best tubular	9 50
Competition lanterns No. 0	
tubular	7 50

LEATHER, LACE.

Rawhide ¾-inch	100 ft. \$2 60
¾-inch	4 40

LEATHERS, PUMP.

Valve and PlungerNet
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LEVELS.

Disston, No. 28 Asst.\$22 05
" No. 18, 20 in.	each 1 33
" No. 22, 24 in.	each 2 40
" Shafting, 6 in.	19 80
" 6 in. gr. glass	24 20
" No. 1 Asst.	6 75
" No. 9 Asst.	12 40
" 24-26 in.	each 1 03
" 28-30 in.	each 1 09

LIFTERS.

Stove Cover.	
Coppered	.....per gro. \$6 00
Alaska	" 4 75

LINING, STOVE.		NIPPERS.		PARERS.		Lineman's Side Cutting.	
Bricks	per crate 42c	End Cutting.		Apple.		Berg's	
LOCKS.		Berg's (Swedish) In. 5 6		Goodell's		Berg's (Swedish), In. 6 7 8	
Barn Door.		Per dozen.....\$12 60 15 20		Turntable		Bik. Pol. Face,	
No. 60 Stearns..	per doz. \$12 00	End and Diagonal Cutting.		White Mountain		doz. ....\$10 70 20 00 23 35	
No. 80 " " "	24 00	Berg's (Swedish) In. 5 6		Reading No. 78		Long Nose Side Cutting.	
MACHINES.		Per dozen.....\$10 05 13 00		Potato.		Berg's (Swedish) In. 5 6	
Riveting.		Hoof.		Goodell's Saratoga, 10 1/4		Bik. Pol. Face, doz. \$12 25 15 20	
Stearns No. 1...	per doz. \$16 00	Heller's		In., doz. 6 50		Flat and Round Nose.	
Tenoning.		V. & B., No. 52, each.....\$2 25		Goodell's Saratoga, 5 in.,		Berg's (Swedish)	
No. 50 Peace's Spoke, each	\$16 00	NOZZLES.		doz. 5 50		Flat, In. 4 5 8	
MAIL BOXES.		Hose.		PICKS.		Bik. Pol. Face,	
See Boxes.		Magic		Adze Eye Ore.....22 1/2 %		Doz. ....\$8 90 13 35 19 65	
MALLETS.		Diamond		Drifting and Poll Picks.....22 1/2 %		Berg's (Swedish)	
Carpenters'.		NUTS, HOT PRESSED.		Plumba, Railroad		Round, In. 4 6 8	
Fibre Head, No. 2 per doz.	\$16 50	Square Tapped.		Surface		Bik. Pol. Face	
" No. 3 " "	19 50	\$2.41 off per 100 lbs.		PINCERS.		Doz. \$11 15 16 30 23 35	
" No. 4 " "	28 50	Hexagon Tapped.		Carpenters', cast steel,		POINTS, GLAZIERS.	
Round Hickory		\$2.41 off per 100 lbs.		No. 6 8 10 12		No. 1, 2 and 3.....	
Round Lig-		OILERS.		Each \$0 56 \$0 72 \$0 93 \$1 08		POINTERS, SPOKE.	
numvitae " 6 25-10 50		Chase Pattern.		Blacksmiths', No. 10.....\$0 96		Stearns' No. 1.....	
Square Hickory " 3 50-5 50		Brass and Copper.....10%		Heller's		No. 2.....	
Square Lig-		Zinc		List plus 10%		POKERS, STOVE.	
numvitae " 8 00-12 00		Railroad.		PINS.		Wr't Steel, str't or bent,	
TINNERS'.		Coppered		Clothes.		per doz. \$0 75	
Hickory	per doz. \$2 25	Steel.		Common, per box of 5 gro. \$0 95		Nickel Plated, coil han'l's " 1 10	
MATS.		Copper Plated		Picket.		POLISH.	
Door.		Can.		Fluted, 15-in.....		Metal.	
National Rigid.....	5&10&5%	Delmonico		Fluted, 21-in.....		Black Silk No. 60-6 oz...	
Acme Steel Flexible.....	50%	Never Slip.....		Spiral		Black Silk No. 70-1 yd...	
MAULS.		Crate.		PIPE.		Black Silk No. 80-1 qt...	
Wood Choppers'.		V. & B.....		Plain Round and Round Corru-		Black Silk No. 90-1 gal...	
Lake Superior & Oregon		per doz. \$7 25-11 00		gated.		Stove.	
pat.	40&5%	OUTFITS, COBBLING.		29 Gauge		Black Silk No. 5 paste, 5	
MEASURES.		Combination		28 "		oz. can	
Galvanized, doz.....	Nets	Economy		26 "		\$ 1 20	
Japanned, doz.....	Nets	Family		24 "		Black Silk No. 10 paste,	
MITRES.		PAIS.		Square Corrugated A and B and		1/2 lb. can.	
Galvanized steel mitrea, end		14-qt. without gauge		Octagon.		Black Silk No. 10A paste,	
caps, end pieces, outlets.....	30%	per doz. \$9 50		29 Gauge		(fireproof), 1 1/2 lb. can...	
Milcor	Net	18-qt. without gauge,		28 "		1 lb. can.	
MOPS.		per doz. 11 00		26 "		Black Silk No. 15 paste, 1	
Cotton, Star (Cut Ends).		20-qt. without gauge,		24 "		lb. can.	
Pounds 12' 15' 18' 24'-3-oz.		per doz. 11 75		Galvanized Toncan Metal, Genuine		Black Silk No. 20 paste,	
Per doz. \$4 00 4 35 5 50 7 00		Sap.		O. H. Iron, Lyonmore		5 lb. can.....	
Enterprise	16 1/2 %	10-qt., IC Tin....		Metal, Charcoal Iron and Key-		Black Silk No. 6 liquid, 6	
Parker	50&5%	12 " " " " " 5 50		stone C. B.		oz. can	
NAILS.		Per doz. \$9 75 10 75 12 75 14 50		Plain Round and Round Corru-		Black Silk No. 8 liquid,	
Cut Steel.....	\$4 25	Water.		gated.		1/2 pt. can.....	
Cut Iron.....	4 45	Galv. qts. 10 12 14		29 Gauge		Black Silk No. 12 liquid,	
Wire.		per doz. \$5 75 6 50 7 25		28 "		1 pt. can.....	
Commonz	3 75	Wood.		26 "		PRESSES, FRUIT AND JELLY	
Cement Coated.		Cable, 2-Hoop....		24 "		Enterprise Manufacturing Co. 25%	
Small Lots.....	4 20	per doz. Nets		14 and 16-oz. Copper, all de-		PRUNERS.	
Horseshoe.		Cedar, 3-Hoop, brass " Nets		signs		Dismont's Pole.....	
Ausable	55&5%	PANS.		Milcor, all styles and gauges..		per doz. \$18 00	
Capewell	15%	Dripping		Standard Gauge.		Water's Improved, per doz.	
Perfect	55&5%	Fry.		Crated and nested.....		60%	
Putnam	20&5%	Common		Crated, not nested.....		PULLERS.	
Star	30&5%	Acme		Portico Elbows.		Cerk.	
Picture.		Roasting.		Standard Gauge Conductor Pipe,		Daisy	
Brass Heads.....	25%	Paxton,		plain or corrugated.		Phoenix	
Brads	50&5%	No. 1 2 3 4		Not Nested		Quick and Easy.....	
Furniture	List plus 15%	Per doz.		Nested solid		Nail.	
NAIL PULLERS.		Neverburn		Stove.		Giant	
See Pullers.		Savory, No. 200..		26 gauge, 5 inch E. C.		per doz. \$14 50	
NAIL SETS.		per doz. \$3 40		nested		Never-Slip	
See Sets.		PAPER.		26 gauge, 6 inch E. C.		FULLEYS.	
NETTING, POULTRY.		Roofing.		nested		Awning-Jap'd	
Galvanized before weaving.....	50%	Major, 1-ply		26 gauge, 7 inch E. C.		Clothes Line	
Galvanized after weaving.....	40%	per square.		nested		Hay Fork.	

PATTY. Commercial Putty, 100-lb. kits \$4 75		SAWS. Butchers'. Atkins No. 2, 14-in. \$12 20 " No. 2, 18-in. 13 70 " No. 2, 22-in. 15 25 " No. 7, 16-in. 15 20 " No. 7, 20-in. 17 30 " No. 7, 24-in. 19 35 " No. 7, 28-in. 21 40 Disston's No. 2, 14-in. 12 20 " No. 2, 18-in. 13 70 " No. 2, 22-in. 15 25 " No. 7, 16-in. 15 20 " No. 7, 20-in. 17 30 " No. 7, 24-in. 19 35 " No. 7, 28-in. 21 40		SETS. Nail. Square head.....per doz. 1 84 Cup point, knurled " 1 75 Rivet. Farmers' .....per doz. 2 50 Tinnies' 3-4 5 75 " 00-0 8 75		SNAPS, HARNESS. Covered Spring .....Add 30% Judd's Pattern Add 33 1-6% to list	
RAIL. Barn Door. Matchless, 1-in. 5c Matchless, 1 1/4-in. 7c Storm King 5c Sliding Door. Bronzed wrought iron, per ft. 3 1/4c		Compass. Atkins No. 2, 10-in. \$ 4 95 " No. 10, 10-in. 5 10 " Blades, No. 2, 10 in. 2 95 " No. 2, 10-in. 3 00 Disston's No. 20 Jackson. 4 00 " No. 40 Sampson 2 50 " No. 2 & 77, 10-in. 6 05 " No. 9, 10-in. 6 80		SNATHS. Double Ring, Bush...per doz. \$9 75 Patent Loop, Bush... " 10 00 Patent Loop, Grass. " 8 75		SNIPS, TINNERS'. Clever Leaf .....40&10% National .....40&10% Star .....50% Milcor .....Net	
RAKES. Garden. Per doz. Steel, Bow, 12-in. Teeth...\$5 50 Steel, Bow, 14-inch " 9 25 Malleable Iron, 12-in. " 4 75 Malleable Iron, 14-in. " 5 00 Hay. Wood, 10 Teeth.....\$4 00 Lawn. 20 Teeth .....per doz. 5 50		Cross-Cut. Atkins No. 221, 4-ft. 3 70 " No. 221, 6-ft. 4 10 " No. 221, 8-ft. 4 45 Disston's No. 259, 4-ft. 3 15 " No. 259, 6-ft. 6 15 " No. 259, 8-ft. 10 65		SPRINGS, DOOR. Perfect. Nos. 2 3 4 5 6 7 Per doz. 45c 50c 55c 65c 80c 90c Bellance. Light Medium Heavy Per doz. \$1 80 2 40 3 75 Torrey's .....per doz. 1 65		SPRINKLERS, LAWN. Stearn's No. 1....per doz. \$11 50	
RAZORS—SAFETY. Gillette .....per doz. \$45 00 Auto Strop 45 00 Gem 8 40 Gem (3 doz. lots) " 8 00 Ever Ready 8 40 Ever Ready (3 dz. lots) " 8 00		Flooring. Atkins No. 96, 16-in. 19 95 " No. 96, 20-in. 21 85 Disston's D19, 16-in. 24 50 " D19, 20-in. 31 00		SQUARES. Steel and Iron.....Net (Add for bluing, \$3.00 per doz. net) Mitre " Try " Try and Bevel..... " Try and Miter..... " Fox's .....per doz. \$6 00 Winterbottom's .....10%		SQUEEZERS, LEMON. Common Wood.....per doz. \$0 75 Porcelain Lined, Wood 1 25 Boss, malleable iron " 1 20 Iron frame por'ca " 1 90 Iron frame, glass " 2 35 bowl " Little Giant, tin'd " 4 00 Drum, japanned " 3 60 Drum, nickel plated " 4 50	
RAZORS—STRAIGHT. RAZOR STROPS. Star (Honing) .....50%		Hand and Rip. Atkins No. 54, 20-in. 17 75 " No. 54, 26-in. 22 10 " No. 53, 16-in. 16 45 " No. 53, 20-in. 20 80 " No. 53, 24-in. 24 20 " No. 53, 28-in. 28 60 " No. 53, 30-in. 31 95 Disston's No. 7, 20-in. 19 30 " No. 7, 32-in. 35 40 " No. 8, 16-in. 17 55 " No. 8, 20-in. 20 75 " No. 8, 24-in. 24 40 " No. 8, 28-in. 29 50 " No. 8, 30-in. 32 95		SHARPENERS, SKATE. Diamond .....per doz. \$1 60 Perfect 1 20		STAPLES. Blind. Barbed .....per lb. 21 @ 22c Butter, Tub " 16 @ 19c Fence— Polished .....per 100 lbs. \$5 45 Galvanized " 6 15 Netting. Galvanized ....per 100 lbs. 6 50 Wrought. Wrought Staples, Hasps and Staples, Hasps, Hooks and Staples, and Hooks and Staples .....50&10% Extra heavy .....35%	
REGISTER. Cast Iron .....20% Steel and Semi-Steel.....30% Baseboard .....30% Adjustable Ceiling Ventilators 30%		Keyhole. Atkins No. 1, complete... 2 30 " No. 2, complete... 3 25 Disston's No. 5, complete 3 25 " No. 10, complete 3 70 " No. 95, complete 5 75		SHIELDS. Expansion Bolt Shields.....60%		STEELYARD. Discount 25%.	
REGISTER FACES. Japanned, Bronzed and Plated. 4x 6 to 14x14.....30% 14x14 to 38x42.....50%		Miter Box. Atkins No. 1, 4x20..... 29 70 " No. 1, 5x22..... 34 55 " No. 1, 6x22..... 38 35 Disston's No. 4, 4x20-in. 36 15 " No. 4, 5x22-in. 43 25 " No. 4, 6x22-in. 47 20		SHINGLES. Per Square Zinc (Illinois) \$15 00		STONES. Axle. Hindostan .....per lb. New Nets More Grit " " Washita " "	
REVOLVERS. Iver Johnson Safety Automatic Hammer .....Net Hammerless " I. J. Model 199..... "		Pruning. Atkins No. 20, 12-in. 7 70 " No. 10, 16-in. 16 50 Disston's No. 20..... 13 75		SHOES. Conductor .....60%		STOPPERS, FLUE. Common .....per doz. \$1 10 Gem, Flat, No. 3... " 1 00 Gem, No. 1..... " 1 10	
RIDGE ROLL. Galvanized. Crated .....70-25% Wired .....70-25-5% Milcor .....Net		Wood. Atkins No. 202..... 3 50 " No. 318..... 10 05 " No. 908..... 15 65 " No. 1509..... 18 40 Disston's No. 111, 30-in. 22 20 " No. 111, 32-in. 22 75 " No. 47, 30-in. 20 25 " No. 47, 32-in. 20 80		SHOT—See Ammunition.		STRAPS. Skate .....per doz. 35c&1 20	
RINGS AND RINGERS. Pull. Copper .....2 1/4-in. 3-in. Per doz. ....\$2 40 \$2 65 Rea's Improved Self- Piercing copper, doz. 3 40 Steel, per doz. 1 50 1 80		SCISSORS. Hubbard Western Pattern Riveted. Size A B C D 1... \$16 75 16 00 16 25 14 45 4... 17 85 17 10 16 35 15 60 6... 18 65 17 85 17 10 16 35		SKATES. Ice. Per pair Key Clamp Rocker, Men's and Boys'—best steel runners, bright finish...\$0 51 Same—nickel plated finish 1 18 Key Clamp Hockey, Men's and Boys'—polished cast steel runners 1 24 Children's Extension Bob.. 55 Half-key Clamp Rocker— Women's and Girls'.... 1 15 Half-key Clamp Hockey— Women's and Girls'.... 1 51 Racers, aluminum finish, including shoes 9 00 Hockey, aluminum 9 00 Both same prices for men's and women's.		SCYTHES. Clipper, Grass.....per doz. \$13 50 Honest Dutchman.. " 13 00	
ROPE. Cotton. 1/4, 5-16 in. Com. on reels, per lb. ....80c 1/4, 5-16 in. Com. in coils, per lb. ....80c Sisal. 1st Quality, base.12 1/2c to 14 1/4c No. 2 .....11 1/2c to 13 1/4c Manila. 1st quality standard brands .....15 1/2c to 16 1/4c No. 2 .....14 1/2c to 15 1/4c Pure Manila. 1st quality, base, per lb. .....17 1/2c to 18 1/4c Hardware Grade, per lb. .....16 1/2c to 17 1/4c		Box. Triangular, No. 6 per doz. \$6 25 Road. Cubic ft. 7 5 3 With runners, ea. \$7 00 6 50 6 20		SKATE. Hubbard's No. A B C D 1 \$16 00 15 10 14 45 13 70 2 16 35 15 60 14 85 14 10 3 16 75 16 00 15 25 14 45 4 17 10 16 35 15 60 14 85		SKATE. Hubbard's Size A B C 14" 17 15 16 40 15 65 16" 17 50 16 75 16 00 18" 17 85 17 10 16 85 20" 18 20 17 45 16 70 22" 18 55 17 80 17 05	
SCRAPERS. Triangular, No. 6 per doz. \$6 25		SCREEN DOOR HINGES. Cast iron .....gross \$13 00 Steel " 9 50		SINKS. Cast Iron. Painted, 16x24 .....Net Enameled, White, 16x24... "		SKATE. Hubbard's Long Handle .....\$10 00 D-Handle 11 00 Sidewalk Scraper 6 50	
SCREWS. Bench. Iron, ins. 1 1 1/4 1 1/2 " \$6 82 7 87 9 45 16 80 Wood, white maple, per doz. 6 00 Hand—Wood .....50%		SCYTHES. F. H. Bright .....77 1/2-20% R. H. Blue .....75-20% F. H. Jap'd .....70-20% F. H. Brass .....72 1/2-20% R. H. Brass .....70-20%		SKATE. Hubbard's Long Handle .....\$10 00 D-Handle 11 00 Sidewalk Scraper 6 50		SKATE. Hubbard's Long Handle .....\$10 00 D-Handle 11 00 Sidewalk Scraper 6 50	
SCYTHES. Clipper, Grass.....per doz. \$13 50 Honest Dutchman.. " 13 00		SKATE. Hubbard's Long Handle .....\$10 00 D-Handle 11 00 Sidewalk Scraper 6 50		SKATE. Hubbard's Long Handle .....\$10 00 D-Handle 11 00 Sidewalk Scraper 6 50		SKATE. Hubbard's Long Handle .....\$10 00 D-Handle 11 00 Sidewalk Scraper 6 50	

STRETCHERS.

Carpet.	
Bullard's	per doz. \$3 90
Excelsior	" 5 25
Malleable Iron....	" 70
Perfection	" 6 30
King	" 4 50

Wire.

O. S. Elwood, No. 1 per doz. Nets	
O. S. Elwood, No. 2	"

SWIVELS.

Malleable Iron	per lb. \$0 10
Wrought Steel	per gro. 4 50

TACKS.

Bill Posters' 6-oz., 25-lb. boxes.	
per lb.	15c
Upholsters' 6-oz., 25-lb. boxes, per lb.	15½c

TAPES, MEASURING.

Anna's Skin	List & 40%
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THERMOMETERS.

Tin Case	per doz. 80c & \$ 1 25
Wood Back	" \$2 00 & 12 00
Glass	" 12 00

TIES.

Bale.	
Single Loop, carload lots	75 & 7%
Single Loop, less than car lots	70 & 15%

TOOLS, SAW.

Disston's Universal	10%
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TRAPS.

Game with Chains.	Per doz.
Victor No. 1	\$2 01
Oneida Jump No. 1	2 75
Newhouse No. 1	5 62

Mouse and Rat.	List per gross.
Sure Catch Mouse Traps..	\$ 3 70
Vim Mouse Traps	3 70
Short Stop Mouse Traps..	3 20
Wood Choker Mouse Traps, 4 hole	17 00
Sure Catch Rat Traps	16 00
Vim Rat Traps	16 00
Short Stop Rat Trap	15 00
Dead Easy Rat Traps	17 00
Star Rat Traps	50 00
Erie	54 00
Packed in One Bushel Band Stave	

Baskets.

List per bushel.	
Sure Catch Mouse Traps (360 Traps)	\$ 9 30
Short Stop Mouse Traps (360 Traps)	8 00
Sure Catch Rat Traps (54 Traps)	6 00
Short Stop Rat Traps (54 Traps)	5 60
Assorted Mouse and Rat Traps.	
List per bushel.	
Sure Catch (216 Mouse Traps and 26 Rat Traps) ..	\$8 50
Short Stop (216 Mouse Traps and 26 Rat Traps) ..	7 50

TROWELS.

Cement.	
Atkins No. 6	19 50
" No. 9	25 50
Disston's	30%

TRUCKS.

Bag	each \$3 75
Warehouse or store,	
No. 1, each	\$24 50
No. 2, "	22 50

TUBS, WASH.

Standard, Wood.	Ex.
Nos. 3 2 1 large	
Per doz. \$9 50 11 25 12 75 15 50	

Galvanized.	
No. 1 2 3	
Per doz. 13 75 15 95 18 60	

TWIN.

White Cotton.	
Eureka, 4-ply	per lb. 30c
Jute.	
3-ply and 6-ply Bale Lots ..	22½c

VALLEY.

Formed Valley Galvanized Steel	60-5%
Milcor	Net

VISES.

No. 700, Hand.	
Inches 4½ 5 5½	
Doz. \$11 15 13 00 14 85	
No. 701, In. 4 5 6	
Doz. \$11 15 13 00 16 70	
No. 1, Genuine Wentworth, Noiseless Saw	per doz. 15 00
No. 2, Genuine Wentworth, Noiseless Saw	per doz. 22 50
No. 3, Genuine Wentworth, Noiseless Saw	per doz. 20 00
No. 500, All Steel Folding Saw	per doz. 16 00

WASHERS.

Standard O. G. cast iron, per lb.	3½c
Wrought steel in 5-lb. boxes, per lb.:	
In. 3/16 ¼ 5/16 ¾ 1	
15c 14c 12c 11c 10c	
¾ ¾ ¾ ¾ ¾	
9½c 9c 8c 8c	

WEDGES.

Ax.	per doz. Nets
Galling	per lb. Nets
Saw	per lb. 8½

WEANERS.

Calif.	
Fuller's, per doz. \$2 00 to \$ 2 50	
Tyler's Safety, per doz.	1 35 to 2 40
Carroll's, per doz. 3 00 to 3 75	
Hoosier, per doz. 3 50 to 4 60	
Shaw Perfected.. 3 00 to 3 75	

WEIGHTS.

Hitching	per lb. Nets
Sash—f. o. b. Chicago.	
Ton lots, per ton	\$40 00
Smaller lots, per ton	42 50

WHEEL BARROWS.

Common Wood Tray	\$3 00
Steel Tray	4 50
Angle leg, garder	5 75

WHEELS.

Carborundum	50%
Emery	60%
Well, Ins. 8 10 12	
Per doz. \$5 50 7 25 8 50	
12-in. heavy holsting, per doz.	\$25 00

WIRE.

100 lbs.	\$3 45
100 lbs.	\$3 25
Galvanized barb wire, per 100 lbs.	4 15
Wire cloth—black painted, 12-mesh, per 100 sq. ft.	2 50
Cattle Wire—galvanized catch weight spool, per 100 lbs.	4 15
Galvanized Hog wire, 80 rod spool, per spool	3 85
Galvanized plain wire, No. 8, per 100 lbs.	4 00

WOOD FACES.

50% off list.

WRENCHES.

Coes Steel Handle, 6-inch.	30%
" " " 8- "	30%
" " " 10- "	30%
" " " 12- "	30%
Coes Knife-Handle, 6- "	30%
" " " 8- "	30%
" " " 10- "	30%
" " " 12- "	30%
Coes All Patterns	30%

Bemis & Call's:	
Adjustable S. 10% Adjustable S Pipe, 10%; Briggs' pattern	30%
Combination Bright	25%
Steel Handle Nut	30%
Combination Black	25 & 5%
Merrick Pattern	30%

Knife Handle Pattern.	
No. 62, Screw Wrench, List plus	30%
No. 60, Steel Handle	30%

WRINGERS.

No. 790, Guarantee, per doz. \$60 00	
No. 770, Bicycle	55 00
No. 670, Domestic	51 00
No. 110, Brighton	45 00
No. 750, Guarantee	60 00
No. 740, Bicycle	55 0
No. 22, Pioneer	42 50
No. 2, Superb	30 00

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Forest City Fdy. & Mfg. Co.,
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Fox Furnace Co., The,
Elyria, Ohio
Haynes-Langenberg Mfg. Co.,
St. Louis, Mo.
Hall-Neal Furnace Co.,
Indianapolis, Ind.
Henry Furnace & Fdy. Co.,
Cleveland, Ohio
Hero Furnace Co., Sycamore, Ill.
Hess-Snyder Co., Massillon, Ohio
Independent Stove Co.,
Owosso, Mich.
Lamneck Co., W. E.,
Columbus, Ohio
Lennox Furnace Co.,
Marshalltown, Iowa
Mahoning Fdy. Co.,
Youngstown, Ohio
Meyer Furnace Co., Peoria, Ill.
Monroe Fdy. & Furnace Co.,
Monroe, Mich.
Peerless Foundry Co.,
Indianapolis, Ind.
Premier Warm Air Heater Co.,
Dowagiac, Mich.
Rudy Furnace Co.,
Dowagiac, Mich.
Scheible-Moncrief
Heater Co.,
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Machinery—Culvert.
Bertsch & Co.,
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Hyfield Mfg. Co.,
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Machines—Stove Pipe.
Hemp & Co., St. Louis, Mo.

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Shaw & Son Co., The Geo. E.,
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Pipe and Fittings—Stove.
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Meyer & Bro. Co., F., Peoria, Ill.
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Malleable Iron Range Co.,
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Quick Meal Stove Co.,
St. Louis, Mo.

Ranges—Gas.
Quick Meal Stove Co.,
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Rasps.
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